THE

Medical and Physical Journal.

VOL. IX.] FEBRUARY 1, 1803. [NO. XLVIII.

Printed for R. PHILLIPS, by W. Thorne, Red Lion Court, Fleet Street, London.

Observations on the Treatment of the MALIGNANT YELLOW FEVER, *which prevailed partially in the City and Liberties of Philadelphia, in the Summer and Autumn of* 1802. *Communicated by* WILLIAM CURRIE, *Fellow of the Colledge of Physicians, &c.*

THE malignant Yellow Fever invaded the city of Philadelphia again this year, but its progress was more limited than heretofore. We have the most incontestible proofs that it was introduced into Philadelphia this year by a ship, called the St. Domingo Packet, which arrived at our Lazaretto in June, and came up to the city, and moored at a wharf at its northern extremity on the 28th of June. Two persons had died on board this vessel at Cape François, and two after her arrival in the river Delaware. Her cargo had been landed, and the bedding of the seamen had been purified; but no attempt had been made to irradicate infection from the cabin or forecastle, places equally, if not more liable to be contaminated by the effluvia of the sick than any other parts of the vessel. The disease was originally confined to a very small number of persons, and the first persons attacked had been on board, or employed very near, the St. Domingo Packet, and all that were afterwards attacked, for the first two weeks, have been traced to intercourse with some of the sick. Its progress was slow, and similar to that of the putrid sore throat and other diseases unquestionably contagious, and no case had been taken, in any part of the city, previous to the arrival of that vessel.

The Board of Health warned the citizens of their danger early, in consequence of which three-fourths of the inhabitants removed, from the neighbourhood where the disease first appeared, into the country, by which means it was for a time nearly arrested; but some persons who had visited the sick, had unfortunately conveyed the infection

to other neighbourhoods before that salutary measure was adopted; in consequence of which new cases again occurred, and gradually increased. But owing (in addition to the early desertion of the inhabitants) to the coolness of the air, in consequence of frequent thunder, and extraordinary floods of rain, the number taken sick from the 4th of July, when the first cases occurred, to the 1st of November, when the disease (after the occurrence of a few cold nights which produced ice) entirely ceased, only amounted to 584; but it is with regret I have to relate that of these 584, two hundred and ninety-eight died, including fifty-eight that died at the hospital, into which one hundred and ten had been admitted from the 1st of August to the 1st of November inclusive. The greatest mortality, in proportion to the number sick, occurred between the 17th and 25th of October, for of about sixty persons attacked with the fever within that period, near forty died. The disease also made its appearance, during that period, in a greater number of places detached from one another, than any other time this season. A black frost, in the night of October 26, gave a sensible check to the progress of the disease, after which it rapidly declined, and entirely ceased before the middle of November. From this statement, it is evident that the disease has been as mortal this year, in proportion to numbers, as at any former period, the year 1798 excepted, notwithstanding the tremendous thunder which frequently agitated the atmosphere, and the floods of rain by which the city, as well as the whole country, was repeatedly drenched during the hot season, and the consequent coolness of the air and freedom of ventilation which prevailed the remainder of the season.

Mercury was generally employed, both internally and externally, for the purpose of exciting salivation as speedily as possible, both at the hospital and in private practice; but, if I can trust my observations, seldom with success, excepting when employed at the very commencement of the disease, and so conducted as to affect the mouth before the dangerous symptoms of the second stage had time to make their appearance.

When employed in the second stage of the disease, at which time the predominant symptoms are generally disordered stomach, restlessness, oppression, and deep sighing, and a countenance that denotes great misery; it constantly aggravated the disease, and hurried on the fatal symptom of *black vomiting*.

In this stage of the disease, when the recited symptoms predominated, the frequent exhibition of mild laxatives

in small doses, particularly Rochell salts, soda phosphorata, soluble tartar, castor oil, senna and cream of tartar; and when these could not be retained, laxatives and clysters, were the most successful remedies, especially when aided by the application of blisters to the stomach, wrists and ancles, at the same time.

A solution of carbonat of soda in water, which is much more palatable than the vegetable alkali, followed immediately by a table spoonful of diluted lemon juice, or cream of tartar in water, had also sometimes the effect of allaying the distressing propensity to puke. But these as well as every other means that I have seen tried, too frequently failed of affording relief.

As dissections shew that the constant propensity to puke, which so generally occurs on the third day in this disease, is owing to an inflammation of the surface of the stomach, and as the indication is to remove this inflammation, what effect would iced water or iced cream have upon it?

Cupping upon the stomach, or drawing blood by the application of leeches, and blistering the stomach, are certainly indicated; but I have had no experienee of the effects of cupping, or of drawing blood by leeches in this disease.

In one case, the disorder of the stomach ceased immediately after the application of a large poultice of mustard flour to the stomach and feet, which occasioned a very extensive and painful inflammation of the skin.

In another case, lime-water diluted with simple cold water, given in small and repeated draughts, had a similar effect.

I have a favourable opinion of the warm bath in the second stage of this disease, especially when blisters or sinapisms are employed immediately after its application, by which means the circulation is more powerfully determined to the surface; but I had no opportunity of employing it this season for want of suitable assistance: for, rendered cruel and inhuman by the dread of contagion,

> " Dependants, friends, relations, love himself,
> " Forgot the tender tie,
> " The sweet endearments of the feeling heart."

Though stimulating remedies and an invigorating regimen appeared indicated in the second stage of this fever, the inflamed and irritable state of the stomach generally rendered them inadmissable and highly dangerous.

In this state of the stomach, the internal use of mercury, either alone, or when combined with opium, always increased the distressing propensity to puke; and when it failed to operate by stool, it aggravated every symptom of the disease; and the internal application of mercury, except when begun with at an earlier period, seldom produced any sensible effect. Dr. Davidson, of St. Lucia, in a letter to Dr. Buxton, dated October 14th, 1801, recommends for the relief of the distressing vomiting which so generally attends the second stage of this disease, a clyster of assafœtida with the addition of *two hundred drops* of liquid laudanum, and afterwards the extract or tincture of opium to be given by the mouth at proper intervals to prevent the return of this dangerous symptom; and he asserts that although he has seen this complaint aggravated by opiates given by the mouth, they have always afforded relief when given in clysters.

Whether, under these circumstances, laudanum given as recommended by Dr. Davidson, is entitled to the credit he ascribes to it, my experience does not qualify me to determine; but I have employed it several times in the quantity of sixty or eighty drops in a warm clyster, made of mucilaginous and aromatic vegetables infused in boiling water, in cases where vomiting, oppression about the precordia, and great irritability appeared to be owing to exhaustion from too copious depletion, with the most immediate and sensible benefit.

In cases of black vomiting, I am greatly deceived if I have not witnessed laudanum of great service, more than once given in a clyster made of a strong decoction of bark and serpentaria, frequently repeated.

This dreadful symptom, however, has been more frequently relieved by giving from one to four table spoons full of an equal quantity of lime water and new milk mixed together, every hour or oftener, than by any other remedy, when employed on the first appearance of that symptom.

In the year 1798, in the case of Mr. Fendal, it completely relieved him of that distressing and ominous symptom, and he recovered after he had been reduced to the most hopeless extremity.

Several instances are mentioned by Dr. Hossack, (who first brought lime-water into credit) of its success at New York; and Dr. Vaughan, of Wilmington, informs me, that a person recovered under his care by the use of it this season

Perhaps

Perhaps this remedy, from its sedative and mildly astringent quality, as well as from its correcting the acid which generally abounds in the stomach previous to the commencement of the black vomiting, would be more efficacious in preventing than in removing this symptom, by preventing the sphacelated condition of the surface of the stomach, to which it is owing, if employed earlier in the disease.

In one case this autumn under my care, given diluted with water, it settled the stomach, when laxatives and clysters were of no avail. In another case, carbonat of soda, in doses of 20 grains, dissolved in water, and frequently repeated, had the same effect.

In cases where the disease began with strong action of the arteries, severe pain in the head, back, and limbs, with little or no sickness at stomach; bleeding, purging with active medicines, and the strict observance of every part of the antiphlogistic regimen, generally occasioned a partial solution of the fever on the third, and a complete solution on the fifth day from the attack. In these cases, wetting the patient's head, face, and limbs frequently with cold water, had a sedative and salutary effect; but neither the plunging nor shower-bath was employed this year.

This form of the disease resembles the eruptive fever of the distinct small-pox, and is generally subdued by the same remedies as render the pustules few and the subsequent symptoms mild. When, however, these were omitted, or employed too sparingly, the remission of the fever was frequently followed by the different and more dangerous train of symptoms peculiar to the second stage of the disease.

When the disease began with weak pulse, general debility, great oppression at the precordia, constant restlessness, and deep and frequent sighing, I have thought myself justifiable, from the analogy of the disease with the putrid sore throat (in which mercury has been found more successful in this country than any other remedy) as well as from the testimony of Dr. Chisholm, (who first employed it for the purpose of exciting salivation in this disease) in favour of its safety and superior efficacy, to have recourse to mercury, and have given calomel in doses of 4 grains every three hours, day and night, carefully guarding it from passing off by stool, by combining it with a sufficient quantity of opium till the mouth became affected by it; and have made it a rule always to begin with it,

 before

before the symptoms of the second stage commenced, or not at all.

Confiding in the observations of Dr. Patterson, a surgeon in the British army, who declares, in a letter to Dr. Chisholm, that he has found the early application of blisters to the stomach and limbs prevent a determination to the stomach, I have in every case where I prescribed mercury, directed a large blister to the stomach, wrists, and ancles at the same time, and as early as possible in the disease. And after the removal of the blisters, have dressed the excoriated surface every four or five hours with strong mercurial ointment, and have also directed it to be rubbed liberally upon different parts of the patient's body at the same time, when insuperable prejudices were not opposed to its use, which unfortunately was too often the case, owing to the ill effects of its indiscriminate and improper application in the late stages of the disease.

Though my success with this mode of treatment was not very flattering, it certainly failed less frequently than any other that I have hitherto witnessed; and if I could have employed the warm bath as an auxiliary I have reason to believe it would have been much more successful.

In every case however where I have seen mercury employed after the distressing and dangerous symptoms of the second stage had come on, it always aggravated the symptoms and increased the danger; and when employed after signs of what is called putrescency or scurvy have made their appearance, such as purple spots, extravasations under the cuticle, and hæmorrhagies from different parts of the body, the exhibition of mercury has invariably accelerated the fatal event, notwithstanding the declaration of Dr. Chisholm to the contrary.

Though salivation may generally be considered as a pledge of security in this formidable disease, a few instances have come under my notice of its failure after salivation had plentifully taken place. These, however, have been so rare, that I am inclined to think it the duty of every Physician acquainted with this circumstance, to make the accomplishment of it the principal object of his aim. I am also persuaded, that the difficulty of exciting salivation is much owing to the lateness of the application, and the omission of suitable auxilliaries.

No restrictions are necessary with regard to the application of mercury, externally, at any period of the disease, so long as the extremities continue warm, and the absorbents preserve their power; but the internal exhibition of it,

it, at any period after the stomach has become constantly disordered, is not only improper but in the highest degree dangerous and destructive.

Philadelphia, Nov. 20, 1802.

THE YELLOW FEVER.

We have been favoured by Dr. PATTERSON, of Londonderry with the following interesting correspondence which has taken place between him and Dr. MILLER, Editor of the Medical Repository of New York. The respectability of the parties in this controversy and the importance of its subject will recommend their arguments to the perusal of our readers,

Dr. PATTERSON *having enclosed some printed letters to* Dr. MILLER *for publication in the New York Repository, that gentleman inserted the following observations on those letters in his Repository.*

(*New York Medical Repository, vol. iv. p.* 83.)

" Dr. William Patterson, of Londonderry, in a letter to Dr. Miller, has been so obliging as to enclose a printed copy of two letters, one from Dr. William Drennan, of Dublin, the other from himself, addressed to Joseph Wilson, Esq. American Consul, on the subject of Yellow Fever. We are sorry our limits do not allow us to re-publish these letters in the present number. These estimable gentlemen certainly manifest the most benevolent wishes for the deliverance of America from pestilential diseases, and a warm and active spirit of philanthropy. But they do not seem to have taken the requisite pains to obtain information on a subject which calls forth all the fervour of their zeal, and all the tenderness of their commiseration.

" The opinions of Dr. Drennan are evidently predicated on the *specific and permanent contagiousness,* and those of Dr. Patterson on the *importation* of yellow fever. These opinions reciprocally depend upon each other, and, of consequence, must stand or fall together. This is neither the proper time nor place to enter fully into such a discussion. If medical gentlemen are determined to consider a disease as specifically contagious, merely because it affects many people at the same time, they may find examples of such contagion in the intermittents of a marsh, in the pneumonia and phthisis of winter, or in the gastritis of a convivial circle, whose viands are converted into poison by the admixture of arsenic. It gives us pain to see such

respectable physicians precipitately rushing into conclusions altogether unwarranted by the premises. If they read the latest and best performances of British physicians on the diseaces of the West Indies, they will find that the yellow fever is not a contagious distemper. Every merchant and planter in those islands knows this fact. We assert that it is as little contagious in the United States. It only prevails within certain local ranges of air contaminated by the effluvia of animal and vegetable putrefaction; and, beyond these limits, is incapable of propagation.* Multitudes take the disease in our cities, who never approach the sick, the suspected vessels, or any fomites supposed to be imbued with contagion. The only possible mode of accounting for these cases, is to ascribe the illness to the patient's immersion in an atmosphere greatly vitiated throughout certain definite portions. Our present number (for May, June, and July, 1800,) affords several authentic instances of the same pestilential distemper in the interior of our country, where importation was impossible, and where local circumstances completely solve the difficulty. Dr. Drennan's plan of extinguishing the disease by high artificial heat would not succeed unless applied to a whole city, which he will grant to be impracticable; and Dr. Patterson's doctrine of importation is insufficient to explain the ravages of yellow fever at Galliopolis, and at Bald Eagle Valley, in Pennsylvania, and at many other places.

" These gentlemen seem to be surprised that so little has been attempted by public authority, and so little accomplished by the medical profession in the United States. But to infer imbecility in the government, or incapacity among physicians, because the havock of yellow fever has not been arrested, is, in our judgment, to take a narrow view of the subject. The devastation of pestilence forms a mournful page in the history of every age and nation. It is to be lamented that American skill should be in any degree

---

* "In asserting that the yellow fever is not contagious, let us be explicitly understood. We do not deny that the excretions of the sick, in this disease, where cleanliness is not duly observed, may assist, like any other kind of animal putridity, in the formation of pestilential matter. But we contend that this is not more likely to happen from the effluvia of a patient in yellow fever, than from the effluvia of one labouring under any other fever, or from the putrid vapours emitted by a gangrenous ulcer, or by a heap of dead and putrefying animal and vegetable substances, under similar conditions of a hot, moist, and otherwise insalubrious atmosphere. How far this differs from the constitution of specific contagion, such as that of small-pox and measles, every reader will be able to judge."

degree baffled; but surely it is not without accumulated precedents. The energies of government, aided by all the wisdom of the illustrious Sydenham and Morton, were insufficient to stay the destruction of the plague in London, in 1665. All the learning, diligence and zeal of the physicians of His Britannic Majesty's forces in the West Indies, have not prevented those islands from continuing to be the grave of Europeans. And, if we are not misinformed, the mortality of scarlatina anginosa, in some parts of England, has lately extended to nearly one-fourth of those who were attacked, notwithstanding all the splendid improvements of medical science in Great Britain.

"While we thus freely animadvert upon the opinions of these gentlemen, we cannot forbear to repeat our high respect for their talents, as well as their motives on this occasion; and we shall be extremely happy to receive their further communications on the subject."

Dr. Patterson *feeling himself called upon to animadvert on these Observations by* Dr. Miller, *has since addressed the following Paper to the Editors of the Medical Repository, at New York, in which work it has not yet appeared.*

Reading in the Fourth Volume of the Medical Repository, p. 83—85, some Strictures on two printed letters, relating to Yellow Fever, transmitted from Londonderry; Dr. Patterson, the writer of one of those letters, feels himself particularly concerned in noticing the construction which the Editors of that respectable Work have put on the humble hint, which he addressed to the American government through the medium of their Consul in this country. He takes leave to assure them, that he did not entertain the smallest idea of imputing 'imbecility' to that government, either in regard to inattention concerning yellow fever, or concerning any other object belonging to their administration. On the contrary, he is strongly prepossessed in favour of both the wisdom and energy of the public councils and sovereignty of the American States. He conceives that he does not transgress against the respect and deference due to, and which he will always maintain for, the constituted authority of every social union, by his concurring in the recommendation of a measure which consults the welfare of a rising and meritorious people, and to which, as far as he could observe, the legislative power of that people had not effectively adverted.

In this case, Dr. P. feels himself actuated by the principles of the British constitution, which he is warranted in considering superior to many, and inferior to none, in the civilized world, for wise polity and rational freedom. Agreeably to the principles of this constitution, it is the undoubted right, and, in certain circumstances, like that now before us, it becomes the duty of every intelligent subject, to point out to the servants of the crown, by memorial or otherwise, such plans and measures as have a tendency to benefit the nation at large; observing, however, in the exercise of this right, a modesty proportioned to the distance between the persons addressed and the person addressing. These principles of government, and rules of decorum, accord with the law of nations and the spirit of philanthropy, which sanction the member of a foreign state, who does not trespass against them, in offering some of the fruits of his researches to his fellow-men in any region. That Dr. P. has not been guilty of such a trespass, he expects every candid reader, after perusing his letter to the American Consul, will do him the justice to admit; and he entertains too high an opinion of the wisdom and liberality of the American executive, to suppose that it would, in a question of health, deride, or take amiss, the suggestions of a dispassionate and well-intentioned observer, living in any country, who has no selfish systems to establish, nor private interests to serve.

Dr. P. now turns to his professional brethren, the medical faculty in America, and protests that, in assigning the causes which operated against the settlement of opinion amongst them, he did not mean to detract from their merits, either as men or as physicians, for in both capacities he holds them in considerable estimation; nor does he see how his expressions can fairly be interpreted in a sense contrary to this sentiment of regard. Difference of opinion, and a desire to examine a disputed point in science, are not evidences of a contentious temper; nor do they imply a charge of 'incapacity' against an opponent. Men earnest in the pursuit of truth and knowledge, do not argue merely for argument's sake; they do not prefer railing to reasoning, nor do they court discussion with persons of 'incapacity,' from whom they cannot derive either information or credit.

As no man is exempt from error, nor any set of men infallible, the Editors consequently ought to allow, that Dr. P. may *differ* from them and yet *not* be in the *wrong*; and *agree* with them and yet *not* be in the *right*, especially in an intricate and unsettled point; for whilst there are men, there will be difference of opinion; and as long

as

as the difference subsists, he must be a very wise man indeed, who is certain that all mankind are wrong except himself. Medicine in general, and the case under consideration in particular, afford striking illustrations of this reasoning. Does dogmatic confidence in our own opinions ever stand upon more slippery ground? or, is it more exposed to ridicule, than when those opinions concern the art of medicine, or relate to a medical question at once complicated and obscure? That the nature and propagation of morbid effluvia, especially of those exciting febrile action in the human body, are yet involved in doubt and difficulty, the early, successive, and recent controversies on the subject sufficiently demonstrate. But, at this time of day, physicians are not like Casuists, amongst whom, the support of one grave Doctor is enough to stamp an opinion with almost unlimited currency.

Though Dr. P. has not been an eye-witness of the phenomena constituting Yellow Fever, and its train of consequences, he is not unacquainted with the opinions of men of high medical authority, who have been eye-witnesses; and who maintain the *doctrine of contagion*, or of a peculiar morbid effluvium, germinated in the human body, being the essential cause of that distemper. The facts stated by these observers he compares with the facts stated by observers of an opposite persuasion, and, with the occasional assistance of analogy, he draws conclusions upon which he founds his opinion. Thus, experience corrects analogy, analogy amends experience, and reasoning tries both. This appears to be as rational a method as any, for arriving at truth in almost every species of human research, and signally so in medical cases, of a subtile character, such as that now at issue. By this method, the delusions arising from what is called *false experience* are avoided; a chain of substantial postulates is obtained; and a valid induction is formed, which shapes, trains, and ratifies a doctrine.

Following this rule of inquiry, the replyer has embraced an opinion of the contagious nature of that pestilential distemper, denominated Yellow Fever; an opinion on which, from the state of information in which he at present stands, he is *not yet* disposed to retract. He does not suppose with the vulgar, that an infectious fever is a disease which seizes every person, *indiscriminately*, who comes within its sphere of action; the plague itself does not possess this sweeping influence. Nor does he confine his ideas of contagion to an "emanation *directly* arising from the body of a man under a particular disease, and exciting a similar

a similar disease in the body of the person to whom it is applied.' But, with Dr. Lind, he would define an infectious fever, 'A distemper, which, in certain circumstances, is, or may be, communicated to one, two, or more persons, and that generally in its identical form and peculiar nature.' Facts and observations, which, in his mind, are convincing, render this definition applicable to Yellow Fever. This disease has been repeatedly traced to seats and matters, which historical records, and recent experience, unite in deeming the fountains, reservoirs, or conduits of contagious effluvia.

Early in the last century (the 18th) the Yellow Fever prevailed in Charlestown four times in twenty-five years, and every time it was traced to some person who had lately arrived from the West-India islands, where it was epidemical. In 1760, during the French war, it first fully unveiled itself in Philadelphia, and was traced to arise from the clothes of a young man who died of it in Jamaica, which were sent to his friends in that city; those friends were the first who fell victims to it, and though it spread to others, its ravages were not very extensive. Afterward it was not known in America till the year 1793, when its introduction was shewn to have originated from several vessels which were at Cape Francois, during the dreadful capture of that place by the Negroes, and which vessels conveyed a number of the wretched inhabitants, with their goods of every description, to Philadelphia. In 1794, it appeared at Baltimore, where it was brought by a ship from the West Indies; and at New York, in 1795, when it was also found to have issued from a West India vessel. In 1797, it again made its appearance in Philadelphia, and was clearly followed up to a vessel from St. Domingo. During the year 1798, it visited not only Philadelphia and New York, but many other of the commercial towns, in all of which it has been traced to the cause now mentioned; and consequently, it is to be presumed, that its visitation of Norfolk, Baltimore, Charlestown, and Providence, in the present year, is deducible from a similar descent. Nay, its extensive effects in the United States of America, might with reason be adduced as one proof of its comparative novelty, and of its origin from a foreign cause.

The Editors "do not deny that the excretions of the sick, in this disease, where cleanliness is not duly observed, may assist, like any other kind of animal putridity, in the formation of pestilential matter. But we contend (say they) that this is not more likely to happen from the effluvia

fluvia of a patient in yellow fever, than from the effluvia of one labouring under any other fever, or from the putrid vapours emitted by a gangrenous ulcer, or by a heap of dead and putrefying animal and vegetable substances, under similar conditions of a hot, moist, and otherwise insalubrious atmosphere." Here the Editors at once admit and maintain, that two different causes are productive of one and the same effect; morbid excretions, animal putridity, and vegetable putrefaction, under certain unwholesome states of the atmosphere, may, it seems, generate *pestilential matter*; thus saying, that a *something else* than the common corruptions of the air, by putrefactive processes, is necessary to constitute febrile contagion. That a something else is requisite for this purpose is certain; for febrile diseases, every one knows, are communicated and spread by emanations from the sick, whose excretions have not the smallest sensible putrid odour or qualities; whilst, on the other hand, putrefaction may be present, in a very high degree, without begetting contagion, as may be daily observed in sundry common manufactories, &c.

Though Dr. P. has not read all the latest and best performances of the British physicians on the diseases of the West Indies, he has met with authorities from that quarter, which convince him that Yellow Fever is there of an infectious nature. Dr. Warren, who resided several years at Barbadoes, observed, so early as the year 1723, that it was a foreign intruder there; that it could not be ascribed to any vitiation of the air from lakes, marshes, or woods, because the land was even then well cultivated, and entirely free from lakes and marshes, without a sufficiency of wood in fact for fuel; and that the disease was propagated by infection, notwithstanding the air of the island was remarkably fresh and pure. Dr. Chisholm, an intelligent and experienced practitioner, and surgeon to the British ordnance in Grenada, traces its route from Boullam on the coast of Guinea, by Philadelphia and New London, into the West Indian islands, where its infectious character became indisputable, and its temper malignant.

There is reason to believe, that mistakes, relative to the real nature of Yellow Fever, have arisen from confounding it with the violent remittents of the West Indies and America, as the former is infectious both in those islands and in that continent, and the latter are not so. Why, it may be asked, did the Americans, from the ingress of the fever, in 1793, to the present day, uniformly guard, with the utmost vigilance and rigour, all the avenues, leading from

from their towns infested with it, to those at the same time free from it? The reason is plain.—Because the magistracy and the great body of the people were convinced by experience and observation, that the malady is procreated and spread by a specific contagious matter.

If Yellow Fever be the offspring of street filth, spoiled beef, rotten coffee, or other substances in a similar state of depravity, why does it appear where these causes are not to be found, and keep off where they predominate? Why did it break out in Kensington, Chester, and Wilmington, which enjoy all the advantages of country air, and complete ventilation? In former times, when the police was not so good as it now is, and during the American contest, when the streets of Philadelphia were often covered with filth of every kind, if the distemper be a native one, why did it not then shew its face? If it be engendered by those contaminations of the air, why did the flats of Baltimore, or the fens of Charles-Town, or Savanna, escape, whilst Boston, New London, and Wilmington, were sinking under its overwhelming power? If the sensible qualities of the air, as heat, cold, moisture, or dryness, were parents of the distemper, why has it sprung up in seasons and periods widely differing from one another in these respects? In 1795, during the hot season at New York, the weather was warm and moist, but there was very little rain; in the hot season of 1798, at the same place, the weather was not only much warmer, but there were heavy rains with considerable thunder; yet, in both these years, the fever reigned in that city.—A city too, which, with the beauties of Nature, combines a healthful situation, salutary municipal laws, and a supply of choice water.

The pestilential fever *generally* breaks loose, in America, in the hot summer months, and is repressed by autumnal cold; yet, from the testimony of Dr. Rush, it appears that it commenced, in Philadelphia, in the cold weather of November, 1794. Surely, then, it is rather paradoxical to say, that a disease, which starts up in both hot and cold weather, or not only in July but in November, is germinated and fostered by the operation of two such opposite causes. Can any thing be more like the agency of a peculiar febrile effluvium, than this property of appearing in contrarious conditions of the air depending on the impressive circumstances of temperature? The answer may be given from the analogy of variolous contagion, which sets out in all weathers, and seasons of the year. As to the appearance of a few sporadic cases of the disease, in the current

year

year (1800), in New York, (in spite, it seems, of strict *quarantine* injunctions,) Dr. P. has not yet heard enough of particulars to form a judgment on the occasion. But were he to hazard any opinion, in this instance, he would conjecture that all its circumstances may be hereafter explained on the principles of the doctrine which he here defends. He likewise apprehends, that the eruption of the fever, in 1796, at Galliopolis, near the river Ohio, and, in 1800, at Bald Eagle Valley, in Pennsylvania, may be accounted for on the same principles. From what has been already said, the Editors may perceive, that for examples of contagion, recourse has not been had to the intermittents of a marsh, the pneumonia or phthisis of winter, nor the poisonous viands of a festive table.

Adverting now to the sanctions of analogy, it appears that several cities in the south of France and in Italy, especially Marseilles, Milan, Genoa, and Leghorn, abound with such foul appendages as are said to generate pestilential fever in the towns of America, without experiencing that calamity. If improvements have been introduced into these European towns, they are certainly not such as have destroyed the causes usually assigned for creating disease, and are confined to such parts of them as are newly constructed. In the old parts of those towns, the streets are narrow, badly paved, and often not paved at all, whilst they are the general receptacle of every kind of filth, without the attention of a police to cleanse them. It is even a custom to keep them constantly strewed with hay and straw, that by the rain, and the passage of people, horses and carriages, those materials may be converted into manure. Besides, all who have visited those towns must have been struck with the want of common sewers, the height and crouded construction of the houses, the numerous families with which they are filled, the rooms seldom cleansed, and the walls covered with cotton and silk tapestry instead of plaster. Add to this, the aggravating pollutions of several years warfare, to which those places have been more or less subjected. If, then, under such unfavourable circumstances, those European towns, situated in one of the hottest climates, where the winters often are exempt from frost, not only have never known either Yellow Fever, or any disorder of the kind, to originate among them, but have been able entirely to rid themselves of the plague by their quarantines, and continue healthy ever since these regulations were adopted, it affords the strongest arguments against the origin of that fever in the towns of America.

Pools

Pools of stagnant water, mill ponds, and the like, have been accused for giving birth to yellow fever. On the continent of America, in some of the northern counties of the state of New York, for instance, the retreat of the water, which had overflowed considerable tracts of low grounds in the vicinity of mill-dams, left the surface of those grounds exposed to the influence of the sun; the consequence of which was, a violent bilious remitting fever, which attacked numbers within a certain distance of the source; but the mill-dams being destroyed, and the waters suffered to flow in their usual channels, the country regained its former measure of salubrity. It does not appear, however, that the sickness thus produced was at all suspected to be Yellow Fever, as no hint to this purpose is given by the narrator, who, on the contrary, as here noticed, classes it amongst the tribe of bilious remittents; fevers characterised by essential features of distinction from that pestilence. Even in the hot climate of Egypt, whilst the waters of the Nile inundate the land, the people are healthy, and diseases do not arise until the waters subside, leaving a vast extent of surface covered with noxious matter, to be exalted and exhaled by the solar heat; yet, as we are informed by late and intelligent travellers, the plague is not an endemic of that country, but that the peculiar diseases are leprosy, affections of the eyes, &c.

The doctrine maintained by the Editors, though not entirely new, has so much of novelty in it, and is supported by so much ingenuity and abilities, that it has a powerful tendency to subvert settled opinions, and to lead nations to abandon practices, in which they have placed much dependence, and which have been generally employed with success for reducing and subduing contagious matter. It is of the utmost importance, therefore, that a doctrine, the more seductive by being thus ingeniously and ably displayed, should be well founded; which can be accomplished only by means of careful examination and candid discussion, under the discipline of observation, reasoning, and science.

To the Reader.

In corroboration of the sentiments contained in the foregoing *Reply*, Dr. Patterson begs leave to refer the reader to Vol. vii. of the London Medical Journal, p. 311, 320, where he will find facts and observations of the most applicable description. Dr. P. would also recommend attention to the tract written by Dr. Haygarth, alluded to in the same place, as investigating the *causes* of pestilential epidemics; a knowledge of which is the safest guide for arriving at their prevention and cure.

Observations

Observations on the Use of the Plaster-Bandage in Ulcers; communicated by Mr. Simmons, *of Manchester.*

THE result of my early experience of the Plaster-Bandage, was published in the Annals of Medicine for the year 1797, under the title of "Observations on Mr. Baynton's Method of treating Ulcers on the Legs;" since that time, I have used it extensively, and with undiminished success. By these further opportunities, additional facts have been collected, all of which I shall now incorporate, and submit them, with deference, to the Public.

The Plaster-Bandage is adapted to almost every species of ulcer; but its utility is most conspicuous in that attended with callosity, in which, for the most part, it will accomplish a cure. But, in order to success, it will be proper,

1. To apply the strips spirally, yet so as to form a complete bandage.

2. To draw them sufficiently straight, to prevent the excess of the granulated above the general surface.

A due observance of the rules which are here laid down, would contribute gradually to supply the loss of tone in the limb; and also to hinder the excess of granulations, an obstacle which the formation of skin would otherwise have to encounter. And due care should likewise be taken not to form a complete circle, which would impede the circulation, and produce debility and œdema below.

The practice was restricted at first to inveterate ulcers upon the legs; but it has since been extended to recent ones, after the subsidence of the inflammation. And, in burns and scalds, it has been applied, both to promote the exfoliation of the slough, for which purpose it is better than emollient cataplasms; and also, to prevent or repress that exuberance of granulation, vulgarly denominated *proud flesh,* which escharotic dressings were formerly required to consume. Ulcers contaminated by a morbid poison will still demand their appropriate remedies; although, in these, the plasters will be preferred to cataplasms, emollient or digestive unguents, whereever their pressure can be borne. In the carious ulcer, they help to eject the decayed bone, and forward the disposition to heal.

The usual effect of the Plaster-Bandage, in the callous ulcer, is a mitigation of the pain, and an abatement of the inflammation; sometimes the effect is contrary, and both

pain and inflammation are increased; but they are seldom of long continuance, and commonly yield in a few days to the repeated affusion of cold water. An objection of more weight is, the irregular ulceration brought upon the sound skin by the continuance of the pressure, which will need the direction of the plasters to be altered, or their use suspended, until the ulceration is healed and consolidated, by bathing it several times a day with the vegeto-mineral, or lime water, or daily dressing with the calamine cerate. The same remedies are also calculated to remove the pustular eruption, which is produced on the skin, in some constitutions, by the small proportion of resin contained in the plaster.

In scrofulous habits, the granulations are apt to grow loose and spongy, and to vegetate so luxuriantly, as to break through all resistance, and penetrate through the pores of the cloth; in that case, it will become expedient to touch them occasionally with the water of acetated litharge, or vitriol of copper, to limit their growth, and amend their disposition. But, before the cavity is filled up, the red precipitate will be better for destroying the surface of the ulcer, when the aspect of it is foul; or, by its becoming stationary, the cure hath ceased to advance. Those are all the accidents supervenient to the course, and their remedies, which experience hath taught. I shall next enumerate some considerable, though subordinate, advantages.

With regard to the frequency of dressing, every second or third day will be often enough, except where the discharge is profuse; because, a more frequent exposure would tend to disturb the formation of skin, or altogether destroy the beautiful film, which spreads from the circumference towards the centre of the ulcer, before its complete conversion into skin. Yet this saving of labour and of cost, is secondary to the economy and convenience of the patient becoming his own surgeon; as he may soon learn to apply the bandage himself, with accuracy; and also pursue his wonted occupation, without interrupting or retarding the cure.

As the operation of every bandage is mechanical, it is obvious that a preference will be due to that which is most certain in its agency. Upon this consideration, flannel is preferable to linen or callico, from being more elastic; and the Plaster-Bandage to all, from being still less liable to displacement. Nevertheless, the effects are not so palpable, as to preclude a diversity of sentiment concerning

cerning them. My own I shall endeavour to illustrate by stating a case.

In that inveterate ulcer, which is situated anteriorly upon one of the legs, the ulcerated cavity is gradually obliterated by a double process; and the increasement of granulation is seconded conversely, by the absorption of the indurated and elevated integument. These opposite processes are continued, until the ulcerated and general surfaces are brought upon a level, and cicatrization only is wanted to a complete cure. Any bandage, bound on with care, would thus far answer the purposes intended; but afterwards, as no other could maintain the same evenness of surface, so none could give an equal facility to the expansion of skin. Accordingly, where the disposition to it is favourable, the skinning process now proceeds with great celerity, so great, that I have compared it to *crystallization* or *freezing;* though not from a supposition of identity, but to inculcate the necessity of preserving the surface of the ulcer in the condition just described. That this is the proper action of the bandage might be collaterally proved, by the uneven site of an ulcer, where several additional thicknesses of plaster will be wanted to fill up the vacuity, and render the compression equable. A method which may be pursued with advantage, and is most eligible in all those cases that need more pressure over a particular spot, than the Plaster-Bandage and exterior roller could safely exert.

Upon these grounds then I trust it will appear, that the healing of an ulcer is accelerated under this treatment, not by endeavouring to approximate the lips of it, which are immoveably fixed by chronic inflammation, but by hindering the exuberance of the granulations; or, if in excess, repressing them to a level with the general surface, and thereby facilitating the *crystallization* of skin.

This discovery will ever be esteemed of great value to the Public, inasmuch as sore legs are a very common and grievous complaint among the lower orders of society, and had, therefore, long constituted a large proportion of hospital practice. So burdensome were they become, that, for more than ten years, the rules of our Infirmary have excluded them its benefits as in-patients, after twice admission. This limitation did not proceed solely, however, from the intractable nature of such cases, but also from their furnishing a ready source of imposition to the idle and dissolute.

For the successful introduction of this valuable improvement, we are indebted to Mr. Baynton, of Bristol, whose

claim to our gratitude is undiminished by any antecedent suggestion. The one to which I refer, is contained in the third volume of the Medical Transactions, in a paper on digitalis, by the late Dr. Darwin of Derby; which Mr. Baynton had not seen; and indeed it had not obtained notice, so that the practice would probably have been lost to the community, but for his descriptive account.

In the choice of materials for composing the plaster, it would appear, that any substance endowed with a quality moderately adhesive, would be equally eligible. Dr. Darwin recommended a composition of the minium plaster and carpenter's glue, for cheapness; and Mr. Baynton has used the adhesive plaster of the shops with a reduced proportion of resin. In some instances, where the skin is thin and delicate, even that small proportion of resin will excoriate, and oblige us to use the litharge plaster alone; which, when fresh and well prepared, especially during the summer months, will commonly prove sufficiently adhesive. I shall now conclude with a few more general observations,

Those Surgeons, who have been most attentive to the application of the bandage, have always been most successful in the treatment of ulcers. Wiseman well knew the principle of cicatrization, and exactly the degree of compression that might be safely and beneficially exerted; he says, "If the lips of the ulcer lie not level with the ulcer, it will not easily cicatrize; therefore you must make a more strict compression by bandage." Vol. i. p. 174. With the same intention, Mr. Else bound sheet-lead over the ulcer. But the Plaster-Bandage is preferable to every other, if applied in the manner directed by Mr. Baynton.

December 31, 1802.

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

WHEN I last addressed the public through the medium of your Journal,* on the salutary effects resulting from the topical application of cold water in arthritic affection, the practice was new in my experience; and (as was observed

---

* No. xxxiii. p. 454.

served in that paper) a theoretical view of the analogy subsisting between gouty, and every other description of inflammation, led me to make trial of its powers. Although popular prejudice against the mode of remedy is too insuperable to admit of so extensive an application of it as is necessary to bring it into vogue; yet particular instances have lately occurred in my practice, which confirm very satisfactorily, my former opinion of its superior curative power. Amidst a variety of cases, in which the topical reduction of temperature rendered much temporary alleviation, but in which, a distrust in its safety too much interrupted its use, to afford any decisive testimony on the subject, are the subsequent examples of its salutary efficiency, in which, its employ was conducted in a manner that warrants placing the results on the records of medical facts.

CASE I. A gentleman who had repeatedly suffered under severe paroxysms of gout, experienced a few months since, a recurrence of the affection. It shewed itself as usual, on the bulb of the great toe, which was much swollen, highly inflamed, and exquisitely painful. The local disease soon extended its stimulant influence over the system, inducing violent symptoms of general irritation. The topical inflammation proceeded in the accustomed manner during about a fortnight, when my advice was desired. On enquiry, it appeared that the routine treatment of covering the affected part with flannel had been sedulously observed; confinement to bed in a warm room, and a liberal use of spirituous liquors, were also judged expedient, to obviate every risk of repulsion. By this course, the patient had added to the local establishment of the disease, considerable constitutional debility. No circumstance in the case gave me the smallest concern for the safety of employing very freely reduced temperature, which was applied by means of cloths wetted in an aqueous fluid. This was directed to be repeated every half hour, or even oftener, if a painful degree of heat should sooner prevail. Sudorific medicine, composed of camphorated tincture of opium (tinctura opii camphorata) and ammoniated tincture of guaiacum (tinctura guaiaci ammoniata) in doses of two drachms each, diluted with water, was likewise ordered to be taken at intervals of six hours. Instantaneous relief arose from the cold application, but which lessened with returning heat, and was promptly renewed by the repetition of the remedy.

 The

The intolerable pain with which arthritic inflammation is accompanied, was so perfectly controlable in this case by reduced temperature, that the patient kept it so constantly diminished by its frequent use, as very speedily to subdue it altogether. On the second day of its employ, no disposition to return of pain on lengthening the intervals of recurring to it continued. The swelling and redness were also much decreased; a livid hue indeed had superseded the florid aspect. The peculiar stiffness arising from debility, and probably from more or less of serous effusion in the cellular texture of the inflamed part, prevented either facility or strength of motion for several days; but with the local disease terminated the systematic irritation, and every other complaint.

The patient waited on me at the distance of several miles in the course of a week, to shew the progress of his recovery, when bark, a nutritious diet, friction, and bandage on the affected limb, were farther directed. He soon after was enabled to resume his usual active avocations, without any inconvenience. This was a case of sheer gout, unmixed with any of those anomalies, or irregularities, which often obscure its evident character. The efficacy of the treatment rested on the anti-inflammant power of topical cold. The remedy was prompt, progressive, and unequivocal.

The design of the medicine here employed was, by its diffusive exciting quality, to calm and harmonize the motive powers, to proportion duly the distribution of the circulating fluids, to balance the various secretions, and thereby counteract either the formation or continuance of any sympathetically morbid action which the pain of protracted gout is liable to occasion; but even this indication for the use of medicine, is founded rather on extreme caution, than an unquestionable necessity.

Cases are in my recollection, in which the prejudices of theory would have shuddered to have hazarded a patient without a medicinal guard, but in which none was employed; and the event proved that none was requisite.—One of this description is the following:

Case II. A gentleman who had, on the slightest catarrhal affections from exposure to change of temperature, been for many years subjected to podagral inflammation. The great toe of one or both feet had been invariably the seat of the complaint. He was lately attacked on a journey, so as to be disabled from prosecuting it,

Having

Having learnt the good effect of my mode of treating gout, my advice was desired. The unprejudiced correctness of the patient's understanding, induced him confidently to submit to the full force of reduced temperature.

Cloths wetted in cold water were first applied to the affected part in the evening, and renewed frequently throughout the ensuing night. The morbid heat yielded before the morning, and with that also the tumefaction, redness, and distempered sensibility. A sense of numbness, or rather weight, only was felt in the morning, which was no obstacle to the patient's pursuing his journey. Cold application was continued for a day or two as a preventive. No farther complaint occurred, and the patient has not, to my knowledge, suffered from arthritic affection since that time. No medicine was directed. Every thing that tended to heat by stimulating was prohibited, and nothing more appeared to be necessary.

This is one among the numerous cases of rapid removal of arthritic inflammation by reduced temperature, which would perhaps almost constantly occur, were similar practice to be uniformly adopted. The earlier the mode of treatment is resorted to, the more speedily would the inflammatory affection be subdued, and consequently the danger (if any) of the irritation being transferred to any other part be proportionately less, as sufficient time would not then be afforded for any associated or sympathetic movements to be generated, either generally or partially, in the system, which might possibly assume a similar action on the cessation of the primary disease.

The advantages also resulting from an early check being given to the disorder, consist in obviating change of structure in the vascular fabric of the affected parts, arising either from the generation of new vessels, the decomposition of old, or from inorganic and obstructing effusions in the cellular texture.

Case III. A gentleman, whose constitutional health had been long subjected to an habitual recurrence of podagral malady at uncertain intervals, and who had been lately benefitted by the topical employ of diminished temperature under my direction, desired my advice in the earliest stage of an attack; so early indeed, as to be able to ride a distance of several miles to consult me. The great toe of one foot was then rapidly tumefying, highly heated, and becoming acutely painful; the foot and knee-joints also partook of the irritation. The affected extremity was ordered

to be enveloped in a cloth dipped in a cold fluid consisting chiefly of water, but unimportantly disguised both to obviate the probable alarm of the patient, and the *certain dread* of the family apothecary, who had distinguished himself as a very *Vulcan*, by his *fiery ordinances*, in the treatment of gout.

The cold application allayed, in a few hours, the inflammatory symptoms, and its continuance speedily re-conducted the disordered action to the natural motive conditions of ease and health. This patient had never before a fit of the gout that did not confine him for several weeks; and if it be allowable to presume from the incipient violence of the last attack, its progressive and permanent severity would have been at least equal to what had been formerly experienced. Its sudden repression, and speedy removal, therefore, evince, in the most satisfactory manner, that arthritic inflammation is indubitably a disease of excessive temperature; that its natural antidote is diminished heat; that this remedy is conveniently applied through the medium of cold water; and that probably the most prompt and efficacious mode of employing it, would be by either immersing the affected limb into that fluid, or by incessant affusion with it, until the painful sense of morbid heat should wholly subside.

My experience fully warrants me in believing that this effect would almost invariably happen in the course of a few hours.

Case IV. A middle aged man, by trade a mechanic, had been during several years periodically afflicted with gout. It usually attacked the feet, and, occasionally, also the hands. His accustomed confinement in this disorder, disabled him for a considerable length of time from engaging in his mechanical employment. In his last seizure (but a few weeks since) he desired my advice. The plan of treatment pursued in the preceding cases was commenced. The affected parts were assiduously plyed with cold water, to which (as in every other instance) the pain speedily yielded; but if the renewal of cold was delayed beyond half an hour, distempered heat would return, accompanied, as the patient conceived, with an aggravated degree of irritation.

The fluid, which was topically applied, was so slightly disguised, that it appeared too much like simple water not to awaken the patient's suspicion, and consequently his fear of its noxious repelling quality. This dread, by suitable

able explanation, however, was soon allayed, and a more unremitted continuance of cold application to the affected parts, completely subdued in a few days the several inflammations, leaving only the usual sense of debility and numbness, for which he was directed to use brisk friction with a flesh brush, two or three times a day. The camphorated tincture of opium (tinctura opii camphorata) and ammoniated tincture of guaiacum, (tinctura guaiaci ammoniata) in doses of two drachms each, in an aqueous vehicle, were also taken every four hours, for the purpose of quieting the prevailing systematic irritation, and determining to the surface; an effect strongly indicated, to remedy an unvaried dryness of the skin.

The patient called on me about a week after the cessation of his complaints, and discontinuance of all medicinal treatment, thanking me for the aid he had received, adding, that he had never before been freed from a fit of the gout so rapidly, with so little pain, and with so early a return of the natural powers of the affected parts.

This case afforded me an opportunity of remarking with much satisfaction, the perfect safety of reducing the inflammatory temperature of gouty affection, even in the worst state of constitutional health. A consumptive tendency was strikingly discoverable in the feebleness with which the ordinary functions of life were performed in this patient. Destitute of arterial tone and muscular vigour, and with that peculiarly dry unyielding cough which characterises tubercular irritation, the reactive powers of the system were extremely weak, and must have been overwhelmed, if, according to popular prejudice, the sudden allaying of arthritic inflammation could ever be followed by a morbid transference of it to some vital part of the system. This idea is really a mere bugbear, occasionally sanctioned even with the solemn gravity of medical erudition, which has served to alarm the prejudiced and the ignorant in every age from remote antiquity, and to preclude the adoption of a rational mode of cure. The reverse of the prevailing opinion is true. It is not the early extinction of gouty inflammation that endangers a retrocession of its morbid influence on the system, but its being protracted on a part.

When by long continuance a local establishment of the disease is formed, it will ultimately diffuse its distempered action over the frame, and thus by either generally or partially undermining the motive powers of health, become more or less predominant, according to circumstances of temper-

temperamental atony, and susceptibility for morbid impression.

Case V. This is an instance which may serve, *instar omnium,* as a decisive proof of perfect security in employing reduced temperature in external inflammation, whether purely arthritic, or as the *blending acumen* of the Nosologist would denominate, rheumatismo-arthritic, or any other description of inflammatory affection. The subject of this case was a labouring man, who had repeatedly suffered from careless exposure to cold, during the refrigerating influence of profuse perspiration. On a former occasion, severe peripneumony resulted from an abrupt reduction of temperature; in the instance under consideration, a violent inflammatory affection of every joint of both the hands and feet was the consequence. The shining tumid aspect, and intolerable pain peculiar to the gout, induced a suspicion of its being that malady; but in the excessive temperature that prevailed, that distinction to me was no more than nominal. When inflammation is accompanied with a sense of heat literally burning, it is very unimportant what it is called; it is of more moment to repress its hurtful tendency with the utmost promptitude.

This patient's limbs were immmediately enveloped with cloths dropping with cold water, which were renewed about every half hour. The moisture was detached by evaporation from the cloths, as rapidly as if held before a fierce fire. The pain, as always happens, was speedily assuaged, but soon recurred, if not prevented by a timely renewal of cold; the constant application of which, subdued by the following day the irritation of the feet and hands; when associated or sympathetic pain began to rage on the knees and shoulders, those parts soon became as inflamed and motionless as those which the irritation had relinquished. The same treatment was pursued, and with similar effect. The cessation of pain in these newly affected parts, was the recommencement of it in those which were first diseased; thus did the irritation alternately change its position during several weeks. All this time the patient may be said to have been *soaked* in cold water.

The pain was tolerable (scarcely indeed deserving the name) when the remedy was freely used; but either inattention or fear of its proving mischievous, occasionally interrupted its due employ, to which probably the want of more early and decisive efficacy may be attributed. Latterly it was judged right not only to reduce the heat of the

parts

parts actually inflamed, but also to keep those which had been recently relieved, in a state of diminished temperature. This expedient perfectly succeeded; no farther inflammation happened; and from that hour the alternate shifting of the affection ceased, and the patient began to recover his constitutional strength. No serious ailment occurred, at any stage of the disease, to the general health; nor did the occasional interposition of purgative, sudorific, and narcotic medicine, in any degree mitigate the severity of pain.

Although a long series of recurring inflammation had broken and exhausted the constitutional strength, inducing that morbid state of irritability, which may be supposed to be peculiarly favourable to admitting diseased impression, yet nothing like a transposition of the disordered excitement happened to any internal part of the system, and even under circumstances in which associative or sympathetic motions seemed to be performing the reciprocal office of *derivants* of irritation from the several affected parts.

It would be difficult to adduce an example more strong than this, in testimony of the curative power of diminished heat in the worst conditioned instances of inflammation. It evinces, beyond all doubt, that excessive temperature is the *proximate cause*, and not merely a *symptom* or *effect* of inflammation. How this is generated, can only be known by investigating these distempered conditions of motive power, that occasion its morbid evolution and redundancy. This enquiry has long been with me a favourite speculation, and may probably hereafter, if leisure should permit, be sufficiently matured to warrant my submitting it to public consideration.

Subjoined are two letters addressed to me on the subject of this paper. The testimony contained in these communications, contributes to verify the correctness of my observation in both these and my former cases on the cure of arthritic inflammation, and may be justly considered as a valuable appendage to them.

I am, &c.

Taunton, Dec. 22, 1802. ROBERT KINGLAKE.

"To

"To Dr. KINGLAKE.

"Sir,

"I was exceedingly gratified on reading your very ingenious paper on the cure of arthritis, inserted in the last Number of the Physical Journal,* particularly as it contained the same sentiments on the subject, as I have long entertained in my own mind. I confess I was a long time shackled with *old* opinions, and found it very difficult to adopt the noble declaration of Horace,

'Nullius addictus jurare in verba majestri.'

Still more to venture on the trial of a new mode of treating gout. However, at length I made the experiment *last August;* when being called to a Mr. H. who had resided many years in Jamaica, I found him attacked with gout for the second time in both great toes. The redness and pain were great, and the skin was smooth and shining. I directed a strong solution of sal. ammon. c. to be constantly applied with folds of linen to the affected parts, kept his body open with kali tartaris, and occasionally gave an opiate. He pursued this plan, and was quite well at the end of a fortnight. This is the only case in which I have made trial of the plan; but if in any future communications to the public, you should think this single testimony will corroborate your own evidence on the subject, you are at liberty to make what use you please of it.

"I have the honour to be, &c.

"G. CUSTANCE, Surgeon."

"*Kidderminster, Dec.* 5, 1801."

"Sir,

"I duly received your favour of the 26th of December, 1801; and, in compliance with your request, I have the pleasure to acquaint you, that I have lately been successful in three cases of rheumatic fever, by the application of cold to the parts that were swelled and inflamed.

"The form I used was ℥ss of sal. ammon. c. dissolved in aquæ ℔j. Rags well soaked in this solution were kept constantly to the parts, and the patients expressed their surprise at the ease they experienced from the application, and the good effects were soon visible in reducing the swelling

* Numb. XXXIII. p. 434.

swelling and inflammation. I am now so fully convinced of the perfect safety and utility of the application of cold to rheumatic and arthritic inflammation, that I shall never in future hesitate to recommend it. I had intended communicating my thoughts on the subject to the Editors of the Medical and Physical Journal; but supposing you have it in contemplation to favour the public, in some shape or other, with your own observations, I prefer giving a statement of simple facts to you, which you are welcome to make what use of you judge proper.

"I am, &c.

"*Kidderminster, April* 15, 1802." "G. CUSTANCE."

An Address, by Dr. Kinglake.

Dr. Kinglake presumes, from the *original view* which he has submitted to the public, in his two papers *on the Nature and Cure of Gout*,* to request *generally* his Medical Brethren, to communicate to him any intelligence which correct experience might furnish, of the effects of his new mode of treatment, that he might be enabled, at no distant period, to present a mass of evidence, competent to determine, *beyond all doubt*, whether the arthritic patient must continue to be doomed to languish under the lingering and indefinite torture of an uncontrollable malady, or safely avail himself of a prompt and efficacious remedy.

The conjoint aid of the medical faculty in this investigation, is almost indispensably necessary, to countervail the insurmountable difficulties which would be opposed to a solitary endeavour, by the inveteracy of popular prejudice, against the employ of *topical cold*, in an affection which has hitherto been supposed peculiarly to require an unremitted increase of both *local heat* and *systematic excitement*.

Taunton, Dec. 22, 1802.

* See Med. and Phys. Journal, Numb. XXXIII. p. 434.—Numb. XLVII.

Observations

Observations on an extraordinary Disease, followed by the Death of the Person, and occasioned by the Presence of an Insect found living in the Substance of the Liver; by Cit. Deleau Desfontaines, M. D. *of St. Germain, and read at the Medical Society, 12th Prairial, 10th Year.*

Cit. DESFONTAINES informs us, that he was desired to see a man, aged 33, who had been previously strong and robust, his temperament sanguineo-melancholic. On first seeing him, he complained of sharp pains in his stomach, and difficult digestion, which was now and then relieved by a slight diarrhœa; the colour of his skin was pale and livid; crude urine sometimes tinged yellow, and charged with a glairy sediment; tongue foul, and the pulse small and hard. These symptoms led the author to suspect visceral obstruction; he ordered him diluents, such as whey, veal broth, and an infusion of plants of the checoranous kind; and in a few days the patient was purged, which seemed to serve him. After the lapse of three weeks the patient complained of vertigo; the pains in the head became habitual, and those of the stomach more severe, and extended down to the great lobe of the liver; the patient lost all appetite for food, and he frequently fainted, during which time the skin became of the colour of saffron; a fœtid smell issued from the mouth; the urine became thick and of a yellowish brown, and this kind of crisis terminated by a discharge of bile. The author acknowledges the uncertainty he felt as to the nature of the disease, the diagnostic of which he found difficult to determine; while, on the one hand, he had reason to conjecture the disease of some of the great viscera, particularly the liver, he dreaded, on the other, the existence of worms, or the presence of biliary calculi. After having recourse to laxatives, bitters, injections per anum, and anodynes, he ordered the application of an emollient cataplasm with some drops of laudanum to the belly, with the intention of diminishing the excessive pain; five weeks had elapsed since his first visit, all the symptoms were aggravated, the stomach rejected food, the fever increased, and the extremities became œdematous. He determined to administer half a drachm of vermifuge powder, in the composition of which calomel entered, without producing any sensible effect. The following day he repeated the dose, which was followed by an evacuation of blood that terminated the existence of the patient. Leave was granted to examine the body.

The

The contents of the thorax offered nothing remarkable; the stomach was contracted, and its superior orifice folded like a purse; its interior membrane was red and inflamed, and shewed some gangrenous spots; the small intestines were swelled and distended with air; the pancreas was larger than usual; the gall bladder was empty and much smaller than its ordinary size, and contained two small calculi; the liver was much diminished from its usual volume, and was in many places hard and schirrous, in others pale and livid; towards the middle of the concave surface of the great lobe was perceived a kind of cavity six or seven lines in diameter, and four or five in depth, filled with a black thick humour, and out of which came an insect yet alive; it was a worm of an extraordinary kind, and resembling no way those which practitioners have described as hepatic worms. It was 4 inches long, and of the thickness of a silk worm of the largest size; its colour was of a brownish red, and its body was articulated in the form of rings; each was marked by a white spot, in the middle of which was implanted a hair of a resisting nature, and extremely sharp, and which, seen through a lens, resembled the quills of a porcupine; the head of the insect was armed with a kind of proboscis also articulated; the inferior extremity was terminated by a large flat tail, similar to that of a crab. Cit. Desfontaines concludes by observing, that whether this reptile was produced or engendered in the substance of the liver, or introduced already formed into the body, he does not pretend to say; he only pretends to establish the fact of its existence, and to shew that its presence in the liver was the original cause of the disease. This observation is followed by some remarks on the case by Cit. Double, M. D. and member of the Society; in which he enters into a detail of the symptoms which attend on, and distinguish between schirrous liver and the presence of calculi in the gall bladder, and of which he draws proofs from Morgagni, Bianchi, &c. and he seems to think that the original cause of disease in this case, was the calculi found, and not the insect. We think it highly probable that the existence of this being might more probably be a consequence of a previous derangement. There are many reflections that will strike the intelligent reader on the perusal of the history, as well as the treatment of this case, but which we forbear to observe. It is to be lamented that Cit. Desfontaines did not present the insect to the society. The presence of worms in the liver is attested by Bianchi, Glisson, &c. and a case is also mentioned in the London Medical Observations.

Account of the Progress of the Jennerian Inoculation upon the Continent, contained in a Letter from Dr. Friese, *of Breslaw, to* Mr. Ring, *of London.*

Sir,

The unremitting attention you have constantly paid to all the endeavours of the physicians of the Continent, to introduce and promote the new Jennerian inoculation in their respective countries, concerning which you have published from time to time many valuable articles in the Medical and Physical Journal, induces me to believe, that you will not take it amiss when I communicate to you a brief account of its introduction into this country.

From an assiduous perusal of some of the best English Medical Journals, I was early acquainted with the first publications of Drs. Jenner, Pearson, and Woodville. I soon furnished myself with the originals, and, in the beginning of the year 1800, wrote to Dr. Woodville for some matter. He very politely complied with my request; and sent me some dry vaccine virus, preserved between two square pieces of glass, at the same time giving me directions how to use it.

Before I received his answer, I was favoured with a letter by Dr. De Carro, who of his own accord, from an ardent desire of seeing Vaccination every where introduced, transmitted me a piece of impregnated linen, encouraging me by his own experience to make a trial. It was, however, some time, before I could find a parent who was willing to trust his children to the first experiment, particularly as the inoculation of the small-pox had been brought into great discredit with us, by the mode in which it had been performed.

After applying in vain to several of my medical brethren for co-operation, I was at length tired of those fruitless endeavours, when I had the good fortune to meet my friends Dr. Kruttge, Physician to the City Hospital, and Mr. Hartmann, Surgeon-major of a regiment of horse in our garrison. On the first of December 1800, we tried the matter received from Drs. De Carro and Woodville; but it proved effete. I then applied to the former gentleman, requesting him to send me a fresh supply.

In consequence of this application, on the 28th of December, I was enabled to inoculate three patients with Cow-pock matter, who took the disease in the most regular way; their pustules exactly corresponding with the prints affixed to Dr. Jenner's first publication. After

After extending the practice to five other individuals with the same success, we thought it our duty to invite the public to avail themselves of the blessings of this important discovery, by a short advertisement in the newspapers. This was scarcely done, when the voice of a detractor resounded, with a view to frustrate all our attempts.

He had the malignant pleasure of seeing the progress of vaccine inoculation arrested for a short time; and it was owing to his bold and unwarrantable assertions, that the public mind was kept for some time in a state of suspense, and that vaccination was extinct near a month.

In the mean while Mr. Schwindt, surgeon-general to the Silesian troops, having been supplied with matter from Berlin, and joining us, we were fortunate enough to resuscitate the practice; and had the satisfaction to see three or four other physicians follow our example.

Thus a society for promoting Vaccine Inoculation was formed; and to this society the whole country is indebted for the propagation of the practice. I was charged by them to write a pamphlet on the subject, in order to inform the public of all the advantages to be derived from it. This was published gratis in the month of March, 1801; and it fully answered our expectations. The practice rapidly spread throughout Silesia; and the number of our patients daily increased.

At the end of June, I was commissioned by my colleagues to publish "A Continuation of Accounts concerning the Progress of Vaccination in Silesia," which contains important evidence in support of the preservative power of the new method, and a list of all the persons who had undergone Vaccine Inoculation.

The number of persons vaccinated by the associated physicians amounted at that time to 522, beside several hundred inoculated by other practitioners of the town, and a much greater number by physicians and surgeons in the country.

The new Inoculation thus becoming general, some blunders might well be expected. We therefore thought it incumbent on ourselves to publish some further remarks, containing rules for discriminating the genuine vaccine pustule from every spurious kind, together with directions how to perform the operation in the best manner hitherto known; and I am happy to assure you, that by these means many mischiefs have been prevented, which in other parts of Germany have so greatly retarded the adoption of this fortunate discovery.

In order to put the preservative virtue of the vaccine virus to the test of experiment, and to place it beyond all reasonable doubt, the society subjected twenty-six children, who had been previously vaccinated, to a public inoculation with fresh variolous matter; which they all resisted.

Such was the progress which vaccination had made, when the anniversary of our first trial occurred. We therefore deemed it a favorable opportunity to look with satisfaction on the result of our labours; and to celebrate this happy day. A select number of the friends of humanity were invited by the society to an entertainment. The print of the immortal Jenner was placed in view; suitable toasts were given, and an ode composed by our celebrated Prof. Fulleborn was sung, which gained the applause of every competent judge. An allegorical transparent picture, and another ode adapted to the subject, closed the joyful scene; the memory of which will never be erased from our minds. Life affords but few occasions for joy and conviviality like this.

The number of vaccinations in Breslaw now amounts to 1800, and that in the country to nearly 10,000. I have been so fortunate as to propagate Vaccine Inoculation to Moscow; where it commenced in the beginning of October, 1801, under the direction of Mr. Lindstrohm, Counsellor of State, and one of the Surgeons in ordinary to his Majesty the Emperor. The young Vaccinoff, of whom you have spoken, in the 38th Number of the Medical and Physical Journal, as the first child vaccinated in Russia, received the infection from an impregnated thread sent by me to Moscow.

In consequence of this success, Her Majesty, the Empress Dowager, has graciously presented me with a valuable brilliant ring, accompanied with a very polite letter.

My friend Mr. Lindstrohm, who is now at Vienna, attending the Grand Duke Constantine, informs me, by a letted dated the 30th of last month, that vaccination is now spread throughout the vast dominions of Russia.

I lately inoculated an ass, five months old, with vaccine matter. It was inserted into the teat; where it produced a small pustule, but no efflorescence.

Should this Report of the State of Vaccination in Silesia, be deemed worthy of insertion in the Medical and Physical Journal, I shall be obliged to you if you will transmit it to the Editors. I have the honor to be, Sir, with great respect,

Your obedient humble servant,

Nov. 6, 1802.

F. G. FRIESE.

Observations and Experiments made with an Intention to employ GALVANISM *in the Cure of several Diseases, by* DR. GRAPENGIESSER, *of Berlin; communicated by* DR. NOEHDEN.

[Continued from Vol. VIII. p. 324.]

Method of applying Galvanism in Cases of Weakness of Sight and Amaurosis.

IN order to excite the paralytic optic nerve, I endeavour to irritate the three branches of the fifth pair, by means of Galvanism; with respect to these two phenomena, I strongly suspect that a connexion subsists between them and the above nerve, though no anatomical proof can be adduced for it. The phenomena I allude to, are, first, the sternutation, which is frequently occasioned on suddenly stepping from the dark into sun-light; and, secondly, that species of amaurosis, which supervenes after a wound on the eye-brows, in the region of the frontal nerve. I therefore chiefly directed my attention to the nervus frontalis and naso-ciliaris, from which those phenomena proceed. To this end I procured a small silver probe, made of the size represented in tab. 1, fig. 6, by which I could touch as much of the surface of the nerves of membrana pituitaria nasi as possible. This probe was fastened to the silver side of the battery, by means of a silver chain, and another conductor, fig. 7, to the zinc side by a brass chain. The silver probe is put into the nose by the patient himself, while the operator touches the region of the frontal nerve, after it has been previously moistened with the knob (*b*) of the brass director, fig. 7, either without interruption or at momentary intervals.

In cases where a stronger irritation is intended, a small blister should be previously applied, then this method requires a less number of strata. The nose becomes gradually excoriated by the entrance of the Galvanic fluid, which renders its application extremely painful, so as hardly to be borne by the patient. In this case, the silver probe may be applied to the upper jaw above the upper molar teeth, in the inside of the mouth. But this application, when often repeated, excites a violent degree of the tooth-ach in several patients, which obliges us either to return to the first method, or to apply the silver probe externally on the cheeks, that require to be previously moistened. It is in general advisable to change, from time to

to time, the place where the Galvanism is to be applied. The most efficacious irritation and shock ensues, however, on touching the cornea with the small knob (*a*) of the brass conductor, fig. 7.

The next effect of these different modes of application is a more or less intense appearance of lightning, depending on the degree of incitability which the optic nerve possesses, and on the efficacy or power of the machine; immediately after a painful sensation and an increased secretion of humours in the glandulæ lacrymales and meibomianae is perceived. The method of application, which was last mentioned, occasions the appearance of lightning in a most intense degree; and even in that case, when no lightning could be excited by the other modes of application. The shock is, at the same time, so penetrating, and the pain so acute, that the patient will hardly suffer the application from more than 20 strata, as a greater number generally occasions a redness and inflammation of the eyes, which generally lasts for several hours, and sometimes two or three days. This method, however, has generally proved very powerful and efficacious, even in cases where the optic nerve was paralysed to such a degree, that not the least appearance of lightning could be excited by the other methods; yet here it had the intended effect, and sometimes the power of perceiving the lightning, on touching the frontal nerve, was restored by it. It may be asked, whence that violent shock of the optic nerve proceeds, on touching the cornea, this membrane being endued with few or no nerves at all? But it is very probable, that the Galvanic fluid passes through the cornea, as being a moist membrane, and is conducted through the humours of the eye (humores oculi) immediately to the optic nerve.

If the disease is curable by means of Galvanism, the iris becomes first moveable, while the sight increases, in case the paralysis of the optic nerve should be attended by that of the iris. Sometimes I have observed the pupil to become moveable without its having any favourable effect on the sight. The sight is gradually restored in the following manner: Every thing about the patient, the ground and atmosphere, appear to him as if covered with snow; and as the sight increases, he imagines that the sun shines on that snow. The objects begin now to appear clearer and more distinct, the patient distinguishes colours, and thus advances towards recovery.

Method

Method of applying Galvanism in Diseases of the Auditory Organ.

For applying Galvanism in diseases of the auditory organs, I have hitherto used five different methods, the first of which consists,

1. *In acting on both Ears at the same Time.*—For this purpose, the two conductors, tab. 1, fig. 3, which I found to be the most convenient and useful, were fastened to the two conducting plates, tab. 2, fig. 2, *b.* and *c.* The conductors consist of a silver wire, bent at one end exactly in the direction of the meatus auditorius, and terminating in a small knob, which must be wrapped in linen. They pass through a glass tube, which is likewise provided with a globe, for preventing its entering too deep into the meatus auditorius by any motion of the patient. The whole instrument should exactly correspond with the largeness of the auditory canal; at least, the knob must entirely fill it. If the knob is not covered with linen, and the conductor brought in without its glass sheath, the ear will be immediately excoriated; a circumstance which renders the farther application, at least for some time, impossible; and before I found out the above expedient, the continuation of my experiments was frequently interrupted, as the patient could not bear the pains caused by the uncovered conductor, in the sore meatus auditorius, and some of them fell into a lipothymy. The ends of the conductors being covered with linen, and moistened, are brought into the meatus auditorius, that has also been moistened; from thence the Galvanic stream, running through the nerves of the meatus with great rapidity, is communicated to the auditory nerve, and immediately occasions in some patients the most violent sounding and tinkling in the ears; and the optic nerve being likewise affected, considerable lightnings appear before the eyes; several patients, likewise, complain of a giddiness, soon after the application, which however is only of short duration.

The degree of irritation, produced by the Galvanic battery, as well as the period during which it is to be applied, must be adapted to the degree of incitability of the patient, and to the degree of the disease itself; a circumstance, which depends entirely on the judgment of the physician. I generally suffer the action of the battery to continue for five minutes, sometimes ten minutes, in several patients fifteen, and sometimes even for half an hour, which is once or twice repeated in a day. It frequently happens, that the Galvanic stream is sometimes very weak,

weak, but, at other times, it acts too violently, which however may be easily prevented by shaking the chains from time to time. It has been already mentioned, that the conductor which is connected with the zinc side, produces a greater effect than that at the silver side, on which account it is advisable to change the conductors from time to time, when both ears are equally affected; but when one ear is worse than the other, the conductor of the zinc side should be applied to the ear that suffers the greatest degree of deafness. For better convenience in the application of the two conductors, the machine, tab. 2, fig. 1, has been invented; by means of which the conductors tab. 1, fig. 3, are kept in proper order and direction, without the assistance of a third person.

2. *Method of applying Galvanism on one Ear.*—This is done in three diffeient ways. 1. By bringing the director, tab. 1, fig. 5, into the meatus auditorius, while the patient touches with a silver spoon, which he holds in his moist hand of the same side, the other end of the pile, by which means the following chain is formed: Zinc pole, ear, neck, arm, silver pole; and vice versa. But this method produces the least immediate action on the organ of hearing. 2. The conductor, tab. 1, fig. 3, being brought into the meatus auditorius, I touch the processus mastoideus, on which the skin has been previously moistened with a silver spatula, connected with the other end of the pile. By this mode of application, the Galvanic stream passes through a part of the auditory organ, viz. the labyrinth. 3. The most poweful and useful method is undoubtedly the following: The conductor, tab. 1, fig. 3, is brought into the meatus auditorius, while the other, tab. 1, fig. 4, is applied to the tuba Eustachii in the mouth, at which moment the patient perceives a sensation similar to that of a series of small globules running through the ear. There cannot be a better method by which the Galvanic fluid may be immediately conducted to the auditory nerve, than this, notwithstanding its being attended with great inconveniencies both to the patient and the operator, as it frequently excites in the former an effort to vomit, which makes the operator desist from the further continuation of the experiment, and obliges him to remove the instrument. The conductor of which I make use for that experiment, consists of a silver wire six inches long, which ends in a small knob; it passes through a glass tube, which is bent at one end, for the purpose of applying it more conveniently behind the velum palati pendulum; it ought to be like-

wise

wise provided with a globe below the knob of the wire, by which means the appetency to vomit is less excited. All these methods of applying Galvanism on one ear, of which the last mentioned is the most advantageous, act almost exclusively on the auditory organ, and only in an inconsiderable degree on the whole head; on which account they produce no giddiness, nor excite congestions of blood towards the head. The last method of applying the Galvanism on the affected organ of hearing is,

3. *The Application of the simple Galvanic Chain on Wounds, occasioned by Blisters behind the Ears.*—A blister being applied behind each ear, a plate of silver, and another of zinc, are put on the two places which have been deprived of their epidermis, after which they are connected by means of a gold and silver chain; the first of which appears to increase the efficacy of the apparatus. The whole is preserved in its proper situation by a head bandage. The apparatus shows itself particularly efficacious, when the zinc plate lies close to the place, while the silver plate is rather loosely fastened, that it may be alternately pressed to the wound, and removed from it. On pressing this plate close to the wound, the appearance of lightning and a gentle tinkling in the ear will be perceived. The time during which this apparatus is suffered to act, depends on the incitability of the patient, and similar circumstances. In general, I found eight to ten, and sometimes only five hours to be sufficient for producing some effect.

Method of applying Galvanism in the Paralysis of the Sphincter Vesicae Urinariae.

The zinc conductor is brought into the intestinum rectum, while the conductor of the silver side is applied above the arcus ossium pubis, on the moistened skin, or on a wound made by a blister. In women, the first conductor may be immediately applied to the collum vesicae through the vagina.

Method of applying Galvanism in Chronical Hoarseness, Aphonia, White Swellings, Struma, Rheumatism, &c.

It is in these diseases not only intended to excite, but likewise to act by Galvanism as a discutient and derivant. With this view, I make use as well of the simple Galvanism as also of that of the battery, either on the moist skin or on wounds made by blisters, as has been already described.

Cases of Diseases, in which Galvanism has been employed.

I. *Cases of Paralyses of the Extremities.*

Case I. Mr. G. C. W. Z. 18 years of age, was on the 28th of February attacked with an indisposition and great weariness, on which account he went to bed soon after dinner, and continued to sleep till the next morning. Being with difficulty awakened by his servant, and finding himself very ill, a surgeon was sent for, who, on examining the patient, discovered that his left side was paralysed, and the shoulder, hip, and dorsum pedis livid; the arm and foot were quite unmoveable, and a slight motion was only left in the fingers. He was ordered to take febrifuges, after which the paralysis of the arm entirely disappeared. He began to take guaiacum, during the use of which the hip got slowly better. At the latter end of March, being called to attend him, I found him without fever, but the left leg was quite paralysed, and an inflammation had taken place on the left foot, which was attended with violent pains. I took the whole for a remainder of a febris rheumatica, apoplectica epidemica, (which at that time was very common in Berlin,) and the inflammation to be, accordingly, of a rheumatic nature. With this view I prescribed powders of calomel, sulphur. antimonii auratum, camphor and opium, to be used with an infus summitat. arnicæ. Some time after I gave him a solution of corrosive sublimate with camphor and opium, and a decoction of lign. guaiac. dulcamara, serpentaria, arnica; which I changed soon after with pills of guaiac. extr. arnicae, alcal. miner. caustic. sulphur and squills; by which remedies the inflammation and pains were removed in the course of about a month. The patient being, however, considerably weakened, I ordered him to take bark with rad. valerian, and summitat. arnicae, which had however no effect on the paralysed feet. Having therefore discontinued the bark, I determined to apply the Galvanism. Two batteries were accordingly raised, one of copper and zinc plates, the other of silver and zinc plates, each of 50 strata, from which, by means of two conductors, as tab. 1, fig. 7, the Galvanism was led to two places, one on the outside of the knee, the other on the back of the foot, above the toes, both which had been previously excoriated by two blisters. This was done twice a day, and continued during one quarter of an hour. The patient perceived by degrees more power and sensation in the whole foot, so as to be able to move and tread upon it, and

and he even began to walk along some chairs by which he supported himself. A fortnight after he was able to move the foot up and down, though still with great effort; its strength, however, daily increased, and on the 16th of June, when he discontinued the application of Galvanism, and was preparing to go to the baths of Toplitz in Bohemia, he had so far recovered the use of his feet, that he could walk with much ease, and stretch his foot as well as before, though the contraction of it was not yet entirely re-established.

Case 2. Charlotte ——, aged 26, had till her 22d year enjoyed the best health; but about this period being afflicted with great vexation and sorrow, she was frequently attacked with head ach, which she particularly suffered in the morning; her appetite was much diminished; and one day she felt a great difficulty in speaking, when conversing with some persons that came to see her. These complaints were the forerunners of an apopletic fit, which soon after supervened. She was entirely deprived of her senses, and quite speechless; the right sight was completely paralysed. Being treated for some time by an intelligent physican, the use of her senses was restored to her, but the speechlessness and the paralysis of the right side remained. She used afterwards, during a period of four years, the mineral baths at Freienwalde, Lauchstadt, Toplitz and Tarandt, by which the aphonia and the paralysis of the foot were removed, though the arm remained as lame as before. This was about the time when I first saw the patient, who was paralysed to such a degree, that she could hardly lift it up. The elbow joint was bent by a spastic contraction of the muscles, and likewise the fingers of the same hand were so contracted, that no power was able to open it. Whenever the Galvanism was applied, this stiffness of the elbow and of the fingers disappeared in a moment, and she could with ease stretch the fingers and the arm. But in order to produce this effect, a battery of 100 strata was required, by the application of which the affected parts became moveable; and after its being continued for a short time, the patient was enabled to lift the arm up to the head and to open the hand, though not so well as before.

Case 3. G. S. a taylor, 35 years of age, much addicted to the use of spirituous liquors, perceived about two years ago, one morning after having taken a glass of brandy, a sense of itching on the right side of his face, and a tetanic

tetanic stiffness in the masticatory muscles, so that he could but half open his mouth. Some days after he felt the same sensation in his right foot, then gradually in his left and right hand. All these members were quite benumbed, stiff and lame; the patient could seize and hold large bodies, but with great diffiulty; small bodies however, for instance, his needle, he was not at all able to manage. In this state he had continued for more than two years, notwithstanding all the medicines he used during that time; when I tried to apply the Galvanism of the battery against the paralysis of the arms, by letting him with his wet hands hold two silver spoons, with which he was ordered to touch from time to time, the two poles of a pile of 50 strata. This being continued for some days, the patient got not in the least better; on the contrary, the paralysis and immobility of the arms seemed to increase considerably, on which account I desisted from any farther application.

II. *Cases of Amaurosis and Weakness of Sight.*

CASE 1. D. G. a merchant of Berlin, aged 40, had received in his childhood, after the small-pox, a cataracta partialis on the left eye, which hindered him from seeing the objects with that eye as distinctly as with the other. About four years ago, however, he had the misfortune to be affected, after an acute fever, with an imperfect amaurosis on the right eye, as he could only see sufficient to be able to walk in the streets, and to perceive when persons approached towards him, though it was impossible for him to distinguish their physiognomy and the colour of their dress. This complaint frequently changed, as it sometimes got better, and sometimes worse; when it had become very bad, he was prevented from leaving his apartments, all objects appearing black to him, and he was in danger of runing against the persons that met him. When his complaint was in the best state, he could distinguish small pieces of money, but could neither write nor read. This periodical increase and decrease of the fever he was inclined to ascribe to the changes of the moon. When he consulted me, about two years ago, he seemed to be extremely debilitated; on which account I prescribed to him bark, valerian, arnica, camphor, by the use of which he got considerably better, so that he could even distinguish colours and small coins. On discontinuing, however, these remedies, he relapsed into the former state. He afterwards underwent another treatment, but without much benefit; and the only thing that seemed to have a favourable effect, was a large blister on the

the back, kept in a state of suppuration. It was about this time that I begun my experiments with Galvanism, and I therefore offered to employ this stimulus for the cure of his affection, to which he readily agreed. Galvanism was accordingly applied, by bringing alternately one conductor into the nose or mouth, and by touching with the other the excoriated region of the frontal nerve. During this application of Galvanism, the patient made such astonishing progress towards recovery, that after a period of about 18 days, he was enabled to read the Berlin newspapers, which he could never do before, and he thought himself so far cured, that he discontinued the farther application, and gave himself up to his former intemperance in spirits and in venery. Three weeks after his sight became almost as bad as ever; and though he had again recourse to Galvanism, in combination with internal exciting remedies, and a large blister behind the ears, the good effects of this repeated application manifested themselves but slowly; and as this seemed to be too tedious to him, he quitted me, and I do not know what is since become of him.

Case 2. Miss R. I. had been afflicted for about 15 years with a dimness of sight, or scotomy on both eyes, of which no other cause could be found out, but that the patient, about a year before the accession of this complaint, being much heated with dancing, had gone into the moist air, and caught cold; besides this, she had much used her eyes by reading and working by candle light. She took for several months pills of soap, tartar emetic and millepedes, but without avail. The sight gradually decreased on the left eye, till a perfect cataract was perceived, which being extremely large, and the pupil immoveable, was thought to be complicated with amaurosis. Notwithstanding these unfavourable circumstances, she underwent the operation; which was, however, so successfully performed on her, that she could distinguish large objects and the persons that were about her; ten days after the operation, she complained of a pressure and pains in the eye, which were found to have arisen from a prolapsus iridis, that was soon successfully removed by gentle caustics. The patient could pretty well distinguish large objects, though there always remained a dimness of sight, for which she was ordered to use the strongest exciting remedies, electricity, &c. by which, however, the complaint increased, and a very bad cataract appeared also on the right eye. After its being operated with great difficulty, a violent inflammation

inflammation and suppuration supervened, by which the eye was lost. About four years ago the sight of the left eye entirely disappeared, and different remedies were in vain applied, amongst others belladonna, which she took in very large doses, without experiencing any good effect on the sight. At last she determined to use the Galvanism, which being applied in the manner above described, produced not the least appearance of lightning in the eye; on which account I intended to discontinue the experiments, thinking at that time the farther application of this stimulus quite useless, if it did no longer effect the appearance of lightning in the eye. I was, however, prevailed by the attending physician to continue my experiments, as he intimated to me, that the nature of that powerful stimulus was not yet so sufficiently known, as to be able to fix the limits of its efficacy. The application of Galvanism being accordingly continued, the patient began to perceive the lightning, particularly on the conductor being applied to the cornea. This mode of application made the pupil, which had been before quite immoveable, so irritable, that it became considerably contracted in sun light. But whenever a considerable shock was given to the eye, an inflammation supervened, which obliged us to discontinue the experiment for several days; a circumstance, which made the use of this stimulus insufficient for producing any farther effect, in curing the disease against which it was applied.

CASE 3. D. M. a silk weaver, thirty-four years of age, requested my assistance in a dimness of sight, with which he had been affected for several years. I found that he had an imperfect amaurosis, which let him distinguish some objects; for instance, the fingers, but he was unable to distinguish the colours. On enquiring into the cause of this affection, I thought it had originated from excess in drinking and in venery, on which account the application of Galvanism seemed to be indicated. It was accordingly applied, in combination with other *excitantia* and *roborantia,* as peruvian bark, valerian, arnica, &c. by which the sight of the patient was thus far restored, that he could perceive the difference of colours, if he looked close on them; the cloud spread before his eyes had entirely disappeared, and I had the satisfaction to find that he could again do his business as before.

CASE

Case 4. I. Valenti, eighteen years of age, a native of Poland, had been afflicted about nine years ago with an inflammation of the eyes, after the incautious extirpation of a plica polonica. Some years after, a dimness of sight supervened, which terminated in a complete amaurosis on both eyes. This affection had already lasted during seven years, when he applied to me for assistance. Having administered to him different remedies, particularly mercurials, I determined at last to have recourse to the application of Galvanism, which I chiefly conducted to the cornea; at the same time he was ordered to take powders of camphor, valerian, and arnica. After having continued this method of cure for about six weeks, the patient had so far recovered his sight, that he could distinguish large objects, if brought close to his eyes. The structure of his eyes, however, being naturally such as to dispose him to myopia, I have but little hopes that his sight will ever be perfectly restored.

Case 5. I. K. forty-five years of age, had an amaurosis on both eyes, and he could only with the left eye distinguish light and darkness. It had been preceded by a scotomy and diplopia, and was most probably occasioned by using the eyes too much by candle-light, and by being continually occupied with writing. He complained at the same time of an hemicrania. Several remedies, as purgatives, emetics, a seton, blisters, having been used without much benefit, I resolved to apply Galvanism on the left eye; but at the same time I ordered him to take the succus expressus millepedum, with powders of camphor, arnica, and valerian. Galvanism being applied for about eight days, the patient perceived some favourable change; he was able to see the flame of a lamp, and to distinguish large black letters, that were written on a white wall. The eye gradually improved in its appearance, it recovered the natural gloss and vivacity, and sometime after the patient could distinguish persons and even the outlines of their physiognomy, and other large objects. A stronger shock being accidentally given to the eye, the sight got worse again, which however was soon remedied by a more cautious application. This patient continues at present this method of cure, from which he has every reason to expect farther success.

Case 6. I. H. K. aged fourteen years, was born, like all his brothers and sisters, with an imperfect amaurosis; he could

could distinguish the outlines of a person, the number of horses that were put to a carriage, and other large objects; but there were different forms, fiery crowns, and other phantasmata continually swimming before his eyes, which lay deep in the orbits, and were continually in a trembling motion. The pupil was very little moveable. I tried Galvanism on this unhappy boy, in combination with other inciting remedies; but all my pains and repeated experiments were ineffectual, whence I concluded, that there might most probably be an organic and local fault in the eyes, which must consequently have defeated any method of cure.

Case 7. M. W. a girl, fourteen years of age, complained for some years of so great a weakness of sight, that it was impossible for her to read one page of a book without suffering pain, and she was hindered from reading any farther by a flood of tears that issued from both eyes. After having used several strengthening eye waters without avail, she was perfectly cured of that complaint by an application of Galvanism continued during two months.

III. *Cases of Deafness and Difficulty of Hearing.*

Case 1. H. S. a boy, twelve years of age, had from his earliest childhood been deaf to such a degree, that notwithstanding his natural vavicity and faculties, he had, as yet, remained incapable of speech. It could not be ascertained whether he was born deaf and dumb, or whether his deafness had arisen from a cold draught of air to which he had been for some time exposed, when quite young. In the seventh year of his age he received the small-pox, after which it was perceived that he heard a little; at least, his attention was drawn towards noise and sounds; which seemed to prove that the cause did not originate in a deficient structure of the organ of hearing, but rather in the nervous system. He was educated in the Institution for Deaf and Dumb, at Berlin, under the direction of the celebrated Professor Eschke, who during his stay there observed, that he was not utterly deprived of hearing, but that, particularly at some periods, he had a sensation of strong sounds and loud noise. Under these circumstances, I thought myself entitled to expect some success from the application of Galvanism; and after the fourth time of its being applied, the boy, of his own account, made a sign that he could hear the noise of a carriage moving along, the

the opening of a door, &c. The application of Galvanism having been repeated eight times, he could distinguish sounds that were less loud, and his faculty of hearing was gradually so much improved, that he could distinctly hear the beating of a watch. By the continued application of Galvanism, he perfectly recovered his sense of hearing on one ear, and he is, at present, able to repeat word by word what is said to him.

Case 2. A lady having been affected with an otitis rheumatica, experienced on both ears such a difficulty of hearing, that she could not understand what was spoken at a little distance; particularly when several persons conversed with one another, she was incapable of comprehending what was said. As she had already used a great number of remedies without any avail, except the sea baths, which seemed to do some good, I resolved to try Galvanism on both ears. The patient became a little giddy from each experiment, and perceived a sounding in the ears, which she compared to distant thunder. After the experiment being over, she felt herself very easy in the head, the tinkling in the ears, with which her complaint was attended, had considerably decreased, and she perceived, after the third experiment, that she could hear much better than before. The patient, however, was prevented from continuing the application of Galvanism, by her subsequent departure from Berlin.

Case 3. H. B. aged forty-seven, had been quite deaf for above seven years, the cause of which he attributed to a severe cold. I applied the Galvanism, in this case, after all the five methods; and as the patient had so much perseverance as to continue the application for above four months, he thus far recovered his sense of hearing, that he could understand what was spoken to him slowly, distinctly, and not too loud. The remaining difficulty of hearing could not be removed by Galvanism, though the experiments were continued for some time.

Case 4. S. B. fifty-four years of age, had been deprived of his sense of hearing by a violent cold and a previous rheumatism, which being removed by proper remedies, a deafness remained, which, notwithstanding the best remedies, gradually increased to such a degree, that he could only understand what was said through a hearing trumpet. Galvanism was applied on him for about six weeks, during which

which time he began to hear better than before, but the singing in the ear did not cease, it rather seemed to increase. The favourable appearance of this cure, however, was of short duration, and in two months after he relapsed into his former state.

Case 5. L. T. a girl, twenty-two years of age, had been affected with a difficulty of hearing for several years, which was attended with a tinkling in the ears. This complaint was hereditary in the family, but had been increased with her by the use of the waters of Toplitz and Carlsbad in Bohemia. Galvanism proved in this case very efficacious the first fortnight, as the sounding in the ears disappeared with almost a perfect recovery of the sense of hearing. On continuing however the experiments during the period of fluxus mensium, of the entrance of which she had not informed me, the sounding in the ears came on again, and at the same time, the difficulty of hearing. Venæsection, foot baths, and cooling remedies being applied without avail, recourse was had to Galvanism, but it had not the desired effect this second time.

Case 6. W. A. aged nineteen, had a difficulty of hearing, attended with a very disagreeable tinkling in the ears, with which she had been afflicted soon after having had the small-pox. As I discovered several symptoms of scrophula, I ordered her to take the proper remedies, as calomel, sulphur antimonii auratum, cicuta, a decoction of lign. guaiac. radix. caric. arenariae, stipit. dulcamar. rad. halenii, &c. and at last the Peruvian bark, by which the scrophulous symptoms disappeared, but the difficulty of hearing remained as before. I now applied the Galvanism of the battery on both ears; and at different times, the simple Galvanic chain on wounds behind the ears, made by blisters. After having used this method of cure during six weeks, her sense of hearing was perfectly restored, and the tinkling in the ears entirely disappeared.

Case 7. Mr. H. P. M. had been frequently affected with cardialgies, preceded by a vertigo and sounding in the right ear, which the first time of his complaint disappeared, together with every fit of cardialgia. Some time after, however, the sounding remained for a little while, when the fit of cardialgia was over, and frequently returned without it, till at last it took a fixed seat in that ear. By degrees it was attended with deafness, which remained

after

after the cardialgia had disappeared of itself. Galvanism was applied on this ear by conducting the Galvanic stream through the tuba Eustachii, and the meatus auditorius externus. The patient perceived a favourable effect after the repeated application, the sounding in the ears decreasing gradually, and the faculty of hearing being improved. He could hear the beating of a watch, and understood what persons spoke at some distance from him. A cold prevented him from continuing the experiments.

Case 8. A. C. a girl, twenty-one years of age, of a scrophulous habit, had been affected for above twelve years with a difficulty of hearing, and a tinkling in the ears. On taking different anti-scrophulous remedies, as calomel, bark, &c. she was freed of the latter complaint; and for the deafness, I applied the Galvanism of the battery, and the simple Galvanic chain in the usual way, by which means she was perfectly cured.

Case 9. A boy, five years of age, born deaf and dumb, was galvanised in the above described manner, which having been continued for about a fortnight, had such an effect that he could hear strong sounds, and noise to which he had never before paid any attention. It is probable that this boy would have made more progress towards the recovery of his sense of hearing, had I not been obliged to discontinue my experiments; a circumstance which likewise took place with another child, born deaf and dumb, in which the application of Galvanism seemed to promise a similar success.

These are all the cases stated by Dr. Grapengiesser, in which he had himself employed, with more or less success, the Galvanic power. At the end of his work he has subjoined a few observations relative to the application of Galvanism, made by Mr. Volker, who succeeded in curing a chronical rheumatism by the means of Galvanism, and by Dr. Flies, who relates two cases of paralysis, in which the Galvanic agent proved efficacious, but particularly a case of amaurosis incipiens, which was perfectly cured by the timely and proper application of this powerful stimulus.

Experiments on Galvanic Contractions *excited upon warm and principally upon cold blooded Animals; by* Martin Tupper, *of Exeter College, Oxford.*

A Series of experiments was instituted some years ago, in consequence of contractions having been then first observed in the muscular fibres of animals when treated in a certain manner with metallic and other substances, and the results of these were arranged under the name of Galvanic phenomena. Such effects are not however produced on the muscular fibre alone, for the nerves which are distributed to the organs of sense may also be excited by the Galvanic irritation, so as to produce impressions similar to the sensations themselves.

This branch of the science of Galvanism has been so fully treated of by Galvani, Humboldt, and other philosophers, that it will not be thought necessary to enter into an extensive detail of any particular part of it. These experiments are indeed, in a great measure, a repetition of those which Humboldt has already so ably conducted; I have however diversified them in many essential respects; and although their results do not in some circumstances correspond with his observations, still I am satisfied that if I have been less successful, it can only be attributed to a lesser degree of excitability in the frogs I made use of, which were however as healthy and vigorous as any that could be procured in this country in the months of July, August, and September.

I have chiefly conducted the following experiments with zinc and silver armatures, connected to the muscles and nerves, and made to communicate either by a simple metallic arc, or by one variously complicated, and composed of different substances. The earths, various fluids, animal and vegetable matter in different states, and the living human body, have also been made use of in many instances, as well in the armatures as in the arcs.

I have chiefly made use of the hind and fore extremities of frogs, very powerful effects may however be produced upon the larger warm blooded animals by the Galvanic battery, and I have in many instances excited very strong contractions in mice, dogs, and oxen, by using a large apparatus of that kind.

I have not attempted to explain the cause of any of the following results; but it is hoped that this branch of Galvanism, which is so likely to explain some of the most important

portant functions of the animal economy, will be prosecuted by Physiologists with that ardour which it so truly deserves.

Some of the experiments which will be related would have been passed over, had it not been for the sake of completing the series from the most simple to the more complicated method of exciting Galvanic contractions in animals.

EXPERIMENT 1. *Of Galvanic Effects excited in the Muscular Fibres.*

When the sciatic nerves of a frog were placed upon a plate of zinc, and the limbs to which they were organically united and distributed upon a plate of silver, and communication was produced between the two armatures by a silver wire or excitatory arc, very strong muscular contractions took place in both the limbs.

When one sciatic nerve was armed, contractions were excited only in the limb to which it was distributed. The contractions in these two experiments were equally powerful, whether the silver arc touched the muscles or their armature. The effects were similar, whether the muscles were armed with zinc, and the nerves with silver, or the contrary. When communication was produced between the armature of the nerve and the nerve itself, contractions were excited, but only in newly killed and very excitable animals. When only the posterior tibial nerve was armed, the contraction took place in the flexor muscles of the foot; when only the anterior tibial, they were excited in the extensors. When the two nerves were armed, the contractions of the flexors were in some degree counteracted by those of the extensors.

Amongst other evident inferences, it appears from these experiments, that it is in a great degree, if not altogether, immaterial whether the armature of the muscles be extended and in contact with them all, or whether it simply consist of a point, in contact with only a small part of a muscle.

EXP. 2. *Of Galvanic Effects when Ligatures are made on different Parts of the Nerves.*

When a cotton thread ligature was made upon one or both of the sciatic nerves, and the circle was completed, (taking care, at the same time, that the portion of the nerve between the ligature and the limbs did not touch the armature of the nerve behind it) the effects were posi-

 tive.

tive. When a silk ligature was substituted the results were the same. When communication was produced between the armature of the nerve, and that part of it between the ligature and the muscles, strong contractions took place; and in animals possessing a high degree of excitability, if the circle was completed from the same armature to the portion of the nerve between it and the ligature, the effects were also positive. In these experiments no suspicions could be entertained that the ligatures were not sufficiently tight. The ligature remaining as before, if the portion of nerve between it and the muscles was completely surrounded by a metallic or any other exciting or conducting substance, no effects ensued when the circle was completed. When no ligature was made, and the whole nerve was surrounded in a similar manner, although the effects were not negative, yet they very soon became less and less powerful, and at last ceased altogether. When the substance which surrounded the nerve was removed, the contractions were renewed with great force. When a ligature was made at the insertion of the nerve into the muscle, no effects could be produced in the corresponding limb, but they were positive in the opposite, which is a proof that the tied nerve was capable of conducting the Galvanic influence. When the above ligature was removed, no contractions whatever could be excited in the limb to which the nerve which had been tied was distributed, until it had been dissected from between the muscles of the thigh. These curious results offer a most fruitful field for further investigation; they have been ingeniously explained, but many circumstances, I think, remain to be cleared up, before their cause can be known.

Exp. 3. *Of Galvanic Effects when the Nerves have been divided.*

When the sciatic nerves of a frog had been divided, and the separated portions armed as usual, whilst the other part of the nerves together with the limbs to which they were organically united, were also placed on an armature, and the cut ends were brought into contact and the communication produced as before, the effects were positive. When the divided portions were placed side by side, or were each brought into contact with the nerve of which they had not formed a part, positive results also ensued. When the nerves of a dog, mouse, or fish, were substituted, the effects were the same. In these experiments the animal arc consisted of nerves not united, and nerves organically united with muscles and muscles.

Exp.

Exp. 4. Having arme'd a portion of nerve with zinc, so that it hung over the edge of the metal, I brought it into contact with the nerve from which it had been separated, and which was still united to the limb; then having placed the nerve of the opposite limb upon the united portion of the other nerve and completed the circle, strong muscular contractions were excited in both the limbs.

Exp. 5. Every thing being disposed as in the first experiment in 3, excepting that the cut portions were only brought into proximity upon a narrow blade of glass interposed between the armatures, when the circle was completed the effects were positive. Wishing to ascertain whether these contractions depended upon the conducting power of moisture which might be interposed between the cut ends of the nerves, I tolerably accurately dried the intervening space and found that slight contractions might still be produced, but that when all moisture was excluded they did not take place, although the cut ends were brought as near to one another as possible.

I fear that some cause prevented my success in these experiments, for Humboldt has obtained positive results in trials of a similar kind. He says, that a nerve very often propagates the Galvanic influence to another at some distance from it, when very excitable and newly killed animals are employed. I have sometimes observed that muscular contractions have taken place under these circumstances, but I cannot determine whether they arose from any influence propagated as an aura from one cut end of the nerve to the other. These effects generally cease very soon, and they may often be observed when no excitatory arc whatever is employed, and even when the limbs are placed upon a table, without the contact of any apparent stimulating cause.

Exp. 6. *Of Galvanic Effects, the Nerves being neither divided nor tied.*

The sciatic nerves and limbs of a frog being disposed as before, a piece of cold boiled muscle was placed upon the armature of the former; and when the circle was completed between the boiled muscle and the armature of the latter, the effects were positive. It appeared to be immaterial whether the nerve was placed upon the boiled muscle, and the arc was brought into contact with the two armatures, or whether the boiled muscle was placed upon the limbs, and communication was produced between it and the armature of the nerves.

The sciatic nerves and inferior extremities of a very lively frog having been placed on their respective armatures, I constituted an excitatory arc of the following substances, and disposed them in the order of zinc, roasted muscle, silver, spawn of frog, zinc, raw liver, silver, intestine, zinc, boiled beef, steel, and the circle being completed between the last piece of zinc in the arc and the (silver) armature of the limbs, the effects were much stronger than when the arc communicated with the boiled beef and silver; but when the steel and the silver armature were made the points of contact with the arc, the contractions were very powerful, although the animals had been killed and skinned nearly two hours.

In the above, as well as in all other similar experiments, I have invariably found, that the effects are always more powerful when the armature of the muscles or nerves is brought into direct contact with a metallic substance in the compound excitatory arc, than when a muscular or a fluid body is interposed.

Exp. 7. Having then excited Galvanic contractions by composing the arc of various heterogeneous substances, I next placed myself in the circle of communication, and obtained positive results, when I touched the armature of the nerves with a bar of steel held in my left hand, and that of the muscles with a piece of fresh muscle held in my right. The effects were the same when a column of blood, water, urine, or milk was substituted for the piece of muscle.

Exp. 8. When the sciatic nerves and lower limbs of a frog had been armed as usual, I moistened the finger of my left hand, and touched the (zinc) armature of the former, and with a silver wire, held in my right, I touched the (silver) armature of the latter, but no contractions were excited; when a bar of zinc was substituted for the silver wire, they became very powerful. When a finger of the right hand touched the armature of the muscles, and the (zinc) armature of the nerves was rubbed with a bar of zinc, the effects were again negative; but the instant silver was made use of they became positive. These and similar experiments were often repeated with similar results.

I have seldom succeeded in producing positive effects, when the excitatory arc consisted of the (zinc) armature of the nerve, a finger of my left hand, my body, and iron wire, and more particularly silver or brass wire, and the (silver) armature of the muscles; but contractions took place,

place, when either of the above three wires were placed in contact with the armature of the nerve, and a finger of the right hand touched the armature of the muscles.

Exp. 9. In the following experiment, in which the armature of the nerves was in contact with a bar of steel held in my left hand, my right joined with the left of a gentleman, his right with the left of another, and so on to a seventh, who completed the circle, by touching the armature of the muscles with a silver wire, the contractions were as strong as if the excitatory arc had been composed of only steel, one person, and silver. If silk, wax, glass, or amber, interrupted the arc, all effects ceased; but when any of the metals, boiled or raw muscle, water, urine, alcohol, the ethers, or the acids, formed a link of the chain, the contractions again assumed their former strength.

Exp. 10. When a quantity of raw muscle was placed upon the (zinc) armature of the nerves, upon this a plate of gold, and upon this again another portion of raw muscle; and raw muscle, a silver plate, and raw muscle, were disposed upon the other (silver) armature, when the circle was completed by producing communication between the muscle on the gold and the muscle on the silver with a silver, brass, steel, or iron wire, the effects were negative. When a plate of silver was placed upon the last piece of muscle on the silver side, and the communication was established, the effects were positive; but if the same silver plate was placed on the zinc side, the effects again became negative. When zinc was placed upon the muscle on either side, and the circle was completed, the contractions were in both instances very powerful.

In other similar experiments, I placed raw muscle on the zinc, and zinc again on the muscle, and when the circle was completed, the effects were positive; but when zinc was placed upon zinc and the muscle upon this, and the communication was then established, only very slight effects were excited. This experiment was repeated several times with the same result. It appears to be a curious circumstance, that the first method should present a positive, and the latter a negative result.

Exp. 11. Galvanic contractions are equally powerful when they are excited by a long as by a short circuit. I have been successful when the arc consisted of a bar of steel four inches long, a bar of silver of the same length,

two men, and 18 feet of iron wire. Another experiment, which afforded instantaneous and positive results, was made in the open air with an excitatory arc of iron wire, about 1870 feet in length. It was immaterial whether the wire was supported by poles, or whether it was in contact with the ground, which was very wet from a late rain. It appears from this, that water is not (at least) a better, and probably a worse, conductor than metal; for as the whole length of the wire was not in contact with the ground, if water had been the best conductor, positive effects would not have resulted, because the Galvanic influence would probably have been diffused over the moist soil before it could have completed the circle.

Exp. 12. It was next wished to be ascertained, whether muscular contractions could be produced by forming the circuit from the armature of nerves to the armature of parts to which they were not distributed: With this view I dissected a frog, so that the sciatic nerves remained united to the upper half of the body, and the communication being effected, moderately strong contractions were produced in the upper limbs, which could not however be renewed twenty minutes after the death of the animal. This experiment was repeated several times, but seldom with much success; muscular contractions were however always very strong in the muscles at the posterior part of the chest and abdomen, as high up as $\frac{3}{4}$ of an inch from the origin of the sciatic nerves. I learnt from subsequent trials, that in experiments of this kind, the contractions were produced in consequence of the sciatic, lumbal, and intercostal nerves forming a chain of communication from the armature of the former to the axillary nerves; for after having partially separated the intercostals from the surrounding parts, and placed the last upon the sciatics, the last but one upon the last, and so on, until a chain of several nerves was formed, the contractions became very strong in those muscles to which any of the above nerves were distributed, when the circle was completed; but when the chain was interrupted, by removing the first intercostal from the contact of the sciatic, the effects again became negative. I can assign no reason why the spinal marrow of the animal did not conduct the Galvanic influence from the sciatic to the axillary nerves, as well as the medium of the lumbals and intercostals, more particularly as, that when a nerve has been entirely separated from

seems

the body, and is made a constituent part of the chain, it seems to be of no consequence whether it is placed in a situation corresponding with the supposed motion of the nervous influence in it, or in a contrary one. Many apparently contradictory results, however, take place in experiments of this nature. It would seem, that the effects are positive or negative, in some degree, as those nerves which are placed in a situation opposed to the motion of the fluid in them, are connected to the surrounding muscles by the cellular membrane or not.

Exp. 13. It is not necessary, to produce Galvanic effects, that any portion of the nerves should be separated from the contiguous parts. Very strong contractions were produced in an instance of this kind, after the animal had been killed and skinned about nineteen hours. Thus, also, if a piece of muscle be separated from any part of the body, (probably excepting the heart) and both ends are armed and the circle completed, it will contract very strongly. These experiments again, in some measure, appear to be contradictory to those related under Exp. 2, in which the effects were stated to be negative when the nerves had been separated from the connecting parts, and were surrounded by a muscular or any other conducting substance.

New Burlington Street, Jan. 9, 1803.

Remarks *on reading Mr. Ward's Theory of the Modus Operandi of Opium; communicated to Doctor Bradley by* Mr. George Nesse Hill, *of Chester.*

HAVING taken some pains to understand the New Theory of the Modus Operandi of Opium, as attempted to be established by Mr. Ward of Manchester, and finding that every number of your useful work, containing any of that gentleman's remarks on this great subject, has tended only to convince me of the just foundation in truth of Dr. Crumpe's statement, (although that author's work has not fallen into my hands) I have taken the liberty of troubling you with a few occasional thoughts, which have occurred to me on this important matter; if you think the best interests of our profession will in any degree be furthered by

by the insertion of them, I crave a place in the Journal, at your convenience; if not, please to set them aside.

I have, for some time, been waiting with some degree of impatience, to see the doctrine Mr. W. has endeavoured to elucidate, and enforce, freely canvassed and discussed in all its views, that its harmony with truth, and its consistency with experience, might establish the fact, or its fallacy and speciousness be detected, and the question be for ever set at rest. Hitherto I have been disappointed; it will give me no trifling satisfaction to find that what I have said has tended to the promotion of this desirable end of all amicable discussion, being long since assured that the real interests of truth have nothing to apprehend from the closest severity of investigation, nor the utmost censure human judgment can pronounce. In common with the rest of your readers, I feel grateful for the ready and accurate communication Mr. W. has given the Medical World in his several instructive papers on the external uses of opium; permit me to add my feeble testimony to the excellence of the practice; nor have I a doubt but his name will be remembered with sincere gratitude by many an unhappy sufferer, who is condemned to the daily use of this medicine. It does not appear to me that this gentleman, when he first announced this matter to the public, conceived of the action of opium in the manner he has lately avowed, when employed in his critique on Dr. Crumpe's Inquiry; for in some of his first communications he speaks of this drug as a tonic stimulant, in the later ones as a sedative. Now one or other of these terms, by whomsoever adopted and acted upon, will certainly lead to false conclusions, and ought to be abandoned, unless he can shew that the medicine possesses opposite qualities, or produces opposite effects from the manner of using it. Perhaps Mr. W. could scarce have selected from important medical authors, a stronger proof of the great tonic stimulant powers of opium than that given by the celebrated Mr. Pott in his Treatise on the Mortification of the Toes and Feet; a quotation from which Mr. W. has chosen for the commencement of his observations. It would be an improper disposal of time, to bring any proofs to shew that the disease, which Mr. Pott so admirably treated, was one of those arising from and dependant upon debility; the history he has given of the subjects of its attack, the symptoms of the disease, and its usual termination, it is sufficient barely to mention. The effects of well known and ac-

knowledged

knowledged stimulants, as the bark, snake root, aromatics, volatile salts, and musk, in retarding the disease, are so many witnesses that a higher or more powerful tonic stimulant was wanting. For the purpose of easing pain, opium was administered. Does any one doubt the cause of this symptom being an hourly increasing destructive debility? And will any one hesitate in denying that a powerful sedative must not have increased the pain, by destroying vigor, or debilitating still more? No one, I believe, would chuse to try the experiment of exhibiting evacuants and debilitants on such an occasion; consequently, no one, thinking thus, would refuse to acknowledge opium as possessing very opposite qualities. But it is not improbable that Mr. Ward's ideas of the definition of the words stimulant and sedative, are very different to mine; if it should hereafter appear they are almost in direct opposition to each other, this circumstance will account for every thing. This point once settled, the next question is, to which of these classes of powerful remedies does opium belong? We are not favoured with Mr. W's definitions of these important words, until we arrive at page 127 of Number xxxvi; and here I may be permitted to observe, that the accusation brought against the advocates for the stimulant doctrine, as Mr. W. calls it, is not less ascribable to those of an opposite opinion, this gentleman sometimes calling opium a tonic, at others a sedative; hence from nothing he, or those authors he has quoted, have said, is the precise definition of the two terms better settled, at least as far as regards opium, although the next page gives us Mr. W's precise meaning, adopted from Dr. Cullen's system; but in this very important instance, the fallibility of this system is, in my humble opinion, glaringly evident. Dr. C. says, "Stimulants are powers capable of increasing the mobility, and of exciting the motion of the nervous power." He must here mean that the nerves, their power, mobility, &c. are the organs by which every thing in the body is influenced, and upon which all muscular action is dependant; and that whatever has the faculty of increasing the force, or energy, of this action or power, will produce a proportionate degree of tone and vigor of the part acted upon primarily, and secondarily of the whole system; but do we not every day perceive that great readiness to action may be produced without great power to support it? Every stimulating agent therefore cannot be denominated a tonic; hence we have numerous substances which will stimulate,

and

and produce increased sensibility and irritability, as they are called, without giving vigor or imparting tone to the body; but it has not yet appeared to me that opium belongs to this class, for its modus operandi, in my opinion, is to impart vigor, and remove morbid sensibility and irritability, inasmuch as these states are dependant upon debility; and this I understand as a just definition of all tonic stimulants. Sedatives he defines as "medicines which diminish the sensibility and irritability of the system, and thereby the motion and powers of motion in it." I humbly presume a little transposition of terms might here be reasonably allowed, without taking too great a liberty with the text of the learned Nosologist; I will venture to say, then, that as sensibility and irritability are states dependent on the exact force of action existing in the body at the time of their being too great or too little, it is an increase or diminution of this state which must increase or diminish those that are dependant thereon; the term sedative I can never understand as conveying any other idea, than that of a power calculated by certain inherent properties to lessen the tone or vigor of the animal system, and all the symptoms consequent on too energetic action; therefore when one author in his definition, says, they are powers which diminish sensibility and irritability, are adapted to allay inordinate motion of the muscular fibres, or to tranquillize and calm the irritated nerves, &c. we can only lament that the writer should have been so vague and indefinite. I infer, that whilst this remains the case on subjects of such incalculable importance, it is almost in vain for writers to argue, or endeavour to explain away the meanings of each other, seeing they have no good and solid ground to rest upon; all the various powerful medicines that are hourly applied to the human frame, must fall under one or other of the classes now mentioned; seeing that whatever is applied to it, whether externally or internally, must, either sufficiently or insufficiently, mechanically or chemically, stimulate and increase, or diminish and destroy its power of action. Hence was it well said by the late Dr. Maddocks, that, "in framing a definition, we should select such circumstances appertaining to the matter to be defined, as are essential, absolutely necessary, always uniform and clear, admitting no abstruse reasoning, incapable of more than one meaning, (not containing two meanings conveying the most opposite construction) and, finally, as easy to be comprehended by the illiterate as the learned." How would Mr. W. attempt to make

make a person, unacquainted with physical terms, comprehend the meaning of the words Stimulant and Sedative? It appears to me he would explain them in some such way as the following: "If you take a large dose of Glauber's salts, and it freely purges you, the effect produced is a temporary weakness brought on you by the Sedative power of the salts. If you are about to make some great exertion, as lifting a heavy load, to which you are scarce equal, but by drinking a glass of brandy are enabled to raise it; you have derived this additional, though momentary strength, from a stimulant. I apprehend, that upon further consideration, Mr. W. must concede to Dr. Brown that neutral salts are, notwithstanding, stimulants, producing their effects by increasing the action of the stomach and bowels; but although they do this, shall I be told they also increase the tone of these parts? I presume not; the fair inference then is, that whatever increases the power of acting, is alone justly entitled to the name of a tonic, and that the term stimulant should be left out of the consideration, because although all substances foreign to the body do stimulate when applied to its different organs, yet great numbers of them diminish power; and, strictly speaking, whatever does so, can alone be termed a sedative. But, as already observed, Mr. W. has applied both these terms to opium; it is evident one or other of them must be abandoned, unless he can by any means prove that the medicine possesses opposite qualities, or has diametrically opposite effects, according to the mode of its exhibition.

December 31, 1802.

Observations on an EPIDEMIC SCARLET FEVER *and* SORE THROAT; *communicated to Dr. Bradley by* MR. R. FREEMAN, *of* CHELTENHAM *in Gloucestershire.*

I HAVE been induced to draw up the following account of the Scarlet Fever and Sore Throat, which has for some time been an unwelcome sojourner in our neighbourhood, in consequence of a general request made by the Editors of the Medical Journal, in the last number of that publication, for Communications respecting the prevailing epidemics of the present season. In submitting it to your inspection, I am aware it will not be in my power to advance

vance any thing new or important to the science of medicine; so much has already been said on the subject of scarlatina by authors of the first celebrity, that it may be presumed little remains for a practitioner of the present day but to repeat their descriptions and enforce their methods of cure; yet may I be allowed to say, there seems a want of due discrimination in most of our nosologists and other writers when treating of these diseases, in so much, that was it not for their prevalence as an epidemic, young practitioners might frequently be deceived in forming their diagnosis. Cullen gives us two varieties, viz. the scarlatina simplex, and the scarlatina cynanchia. Sauvage furnishes us with an outline of each species, distinguishing the latter by the very appropriate term anginosa. Vogel and Sagar describe the milder disease only. Macbride names the two varieties, scarlatina benigna and scarlatina maligna. For the former of these varieties we are referred to the authority of Sydenham, who describes it as a mild disease, without danger, requiring only a regulated diet and confinement, and unattended with any affection of the throat. Morton, in his book on inflammatory fevers, describes the symptoms of both these species of scarlatina with his accustomed accuracy, but at the same time seems desirous to confound the disease altogether with the measles, from which he asserts it to differ only in the appearance of the eruption; other writers have adopted the same indiscriminating idea. In the course of forty years practice, we are told by Cullen, he has never once met with the milder species of the disease, but in every instance where he has seen it prevail, it has uniformly been of the latter variety; which he proceeds to describe in terms of much ambiguity, expressing doubts whether it might not, in many instances, be mistaken for the cynanche maligna. Dr. Withering has given the world a very clear and satisfactory account of its appearance at Birmingham in the year 1778, in which instance it seems to have assumed its most malign aspect; he allows, that in some instances it bears a close resemblance to the ulcerated sore throat, or cynanche maligna. As it may be deemed impertinent to continue this examination further, I shall here drop it by observing, that the disease in question is sufficient to furnish us with a proof of the imperfections of our best systematic arrangements, of the confusion and false confidence to which they may give rise, and of the many errors in practice which must necessarily ensue.

I will

I will proceed now to give some account of the scarlet fever, as it appeared in our neighbourhood: Its commencement may be fixed about the latter end of July; we are arrived at the middle of December, and have not yet witnessed its termination, though in consequence of the number of persons who have gone through the disease, it has for this month past been gradually on the decline. By far the greater number affected have been children, from infancy to the age of fifteen years; from that period to thirty years, include almost the whole of the remainder, and they have been, comparatively speaking, not many; of persons further advanced in life, very few have come under my observation. As it would lead me too far, was I to particularise every symptom, I shall content myself with pointing out the most prominent, and those which seem to constitute varieties in the disease. In general, the usual phenomena of inflammatory fever have, in the first instance, been accompanied with enlargements and indurations of the submaxillary glands, with a stiffness and rigidity of the muscles of the neck, and with a painful and difficult deglutition; upon inspecting the mouth, the uvula and fauces appear tumefied, and bear evident marks of inflammation, giving out an abundant secretion of mucus; the patient complains of head-ach, sickness, nausea, and total loathing of food; the alvine evacuations are most commonly of the usual quantity, the urine high coloured, and depositing a copious sediment; the pulse is weak, and varying from 110 to 130; the period at which the scarlet eruption makes its appearance varies also considerably; in some instances, it is seen on the first day of the fever, in others it is delayed to the second or third day; this eruption does not appear, as it is generally described in authors, in large blotches, but in small minute spots or streaks, occupying the whole surface of the body. In general, the third, fourth, and fifth days are the worst; during this time the heat of the skin is very great, the patient becomes languid, watchful, and frequently betrays a confusion of intellect; from the fifth day to the eighth the symptoms gradually wear off, leaving the person in a state of debility, which, however, does not prove of long continuance; the scarlet colour disappears, in its stead the skin becomes brown, dry, and covered with minute branny scales, dropping off by friction; in some instances the cuticle entirely separates itself from the hands and feet. Such is the disease in its mildest and most general aspect. Three

varieties

varieties are distinguishable. 2. Where the tonsils, uvula and soft palate have been affected with sloughs and ulcerations, requiring the liberal use of detergent gargles; in some instances, the tongue has partook of the inflammation, when the appearance has much resembled aphthæ; this variety has produced nearly as many instances as the foregoing; the patients have been longer in recovering their health, and in some instances a putrid tendency has indicated the limited use of wine and antiseptic remedies. 3. A total absence of the scarlet eruption; and of this I have seen several instances; (indeed I was myself an instance, having contracted the disease in the month of September) every other characteristic symptom was strongly marked. 4. When the disease has from the commencement assumed a direct putrid tendency, differing in no respect from the cynanche maligna; every fatal case that has come to my knowledge may be referred to this variety; fortunately, it has produced but few instances.

In the treatment of such a disease as this, it is obvious we must be guided by the particular symptoms of each case, as it would be impossible to lay down an invariable line of conduct. Vomits, in the first instance, have been commended; and as far as my experience goes, with great propriety; their use, I think, should be confined to the commencement of the disease; in its advanced state they proved injurious; nor would I give them indiscriminately, but only in those cases where the sickness and nausea greatly prevail. Alkaline remedies have been pointed out as specifics in this disease; I cannot say I have found much advantage from their use. Bark, unless in cases where the septic tendency is very urgent, is certainly inadmissible, but it may be used with more propriety in the subsequent state of debility. Opium during the inflammatory state, whether in small or large doses, evidently did harm. Bleeding, either generally or topically, I never had recourse to. Though Dr. Withering has given us a strong caution to avoid the use of blisters, I have applied them to the chest in cases where the respiration has been difficult and oppressed with much advantage; they have also proved useful when applied to the enlarged glands of the neck; though I have more commonly used as a substitute an epithem with the aq. ammon. pur. which, by gently stimulating the skin, has afforded considerable relief. In fine, the experience of one epidemic proves, that the scarlatina cynanchia may in the generality of cases be very safely trusted to Nature, and

and a mild antiphlogistic regimen; where they vary from the general and require the assistance of art, the symptoms are sufficiently defined to indicate to the practitioner the proper remedies he should apply.

December 20, 1802.

P. S. A late writer on Scarlatina, (Dr. Peart) takes upon himself considerable merit for propagating what he calls a discovery of his own, viz. that the ammonia preparata is a specific in this disease. To prove that this is no modern discovery (at least that its use is not such) it will be sufficient to quote a passage from Dr. Withering's Treatise; after commending the use of fixed alkali, he observes, "the volatile alkali may likewise be given with advantage, but it is difficult to get a sufficient quantity of it swallowed."

Some Considerations to shew that the Idea of effecting a radical Cure of the Bubonocele ought not to be entirely abandoned.

THE ingenuity of the most consummate surgeons has for centuries past been exerted in devising some means to accomplish a radical cure of the Bubonocele; with this view castration, the caustic, the punctum aureum, and royal stitch, have been severally practised; but, on account of the incertitude, pernicious and often perilous consequences of the three first of the above operations, they have been most justly exploded from surgery, while the last one has also sunk, perhaps without good reason, into entire disrepute. For, as far as I can judge, i is deserving of much more consideration than mode n practitioners seem to have bestowed upon it, and is by no means so incapable of being very materially improved but that it may thereby be rendered likely, under certain circumstances, to prove both safe and efficacious.

Ambrose Pare, Wiseman, and many of the ancient authors before them, describe the mode of performing the royal stitch, and, even in their rude way of operating, suc cess was not unfrequently the consequence. Mr. Samuel Sharp, however, appears to be the last modern of any authority, who does not disapprove it, and he was even inclined to think, that it would generally prove successful,

when practised with the improvements that he recommended. On the contrary, all the celebrated writers who have flourished since the year 1750, (when his Critical Enquiry was published,) as well in this country as in France and Italy; Pott, Sabbatier, Bertrandi, &c. all avowably proclaim against the propriety of undertaking it.

Although the unskilful manner in which this operation was executed by the ancients, is sufficient to induce us to lay it aside in that form, and the improvements hinted in Mr. Sharp's Critical Enquiry do not, as I conceive, render it so likely to be successful as it might now become in the present refined state of surgical knowledge, yet I cannot agree that Mr. Pott, or any other writer, has adduced objections sufficiently forcible to shew that what is termed the royal stitch ought to be for ever abandoned. Nor does it appear to me, that Mr. Sharp's ideas of the disease and parts affected by it, were erroneous and imperfect, because he was of opinion, that straitening the passage from the abdomen into the scrotum by this operation might prove successful in the radical cure of Bubonocele. It is true, that when Mr. Pott asserts that all its patrons equally betrayed such ignorance, he does not particularly mention Mr. Sharp; nevertheless, since the latter had already several years published his opinion on this subject before the former's Treatise on Ruptures appeared, the severity of the censure must be directed as much against him as any other writer. The author of this little paper does not wish to be esteemed at all critical, nor will he pretend to animadvert on this part of the writings of the illustrious Pott; he only regrets that it does not seem to elucidate the facts upon which some expressions were founded.

Indisputably, it seems to be a very natural idea, that the descent of a hernia must be hindered, by closing the aperture through which the parts protrude; it is on this principle that the operation was done, and that various kinds of trusses have been invented and worn; but, as every body knows, the best made trusses are often inadequate constantly to fulfil the intention, and besides the continual danger of strangulation in which a person lives, whose hernia occasionally comes down, a truss is a very cumbersome thing, and highly inconvenient to such as are young and in the prime of life. Any suggestions therefore which may from time to time be intimated, with a view to procure more certainly a radical cure of the Bubonocele, ought not, most assuredly, to be treated slightingly, and never will be by the unprejudiced. To this part of the pro-

fession

fession in particular are the following considerations addressed, which are neither inconsistent with the dictates of anatomy, nor the principles of surgery, and as such will at least awaken the minds of some, to scrutinize further the subject.

1st. The hernial sac of a bubonocele, as it is hardly necessary to premise, is formed by an elongated production of the peritoneum, which is pushed down before the protruded viscera either into the groin or scrotum; at its exit through the abdominal ring it is situated over the spermatic cord, upon the anterior part of which and tunica vaginalis it also lies in its course downwards, and is only covered by the common integuments of the groin and scrotum. As it soon becomes adherent to the circumjacent parts after its first protrusion, surgeons are seldom or never able to procure its return.

2dly. Probably it will generally be conceded that a hernial sac is capable of uniting by the adhesive inflammation, just as most other parts of the body do; if any one doubts it, he has only to call to his remembrance cases, where a radical cure has occasionally followed the concretion of the neck of the sac, after inflammation excited by the pressure of the pad of a truss; also others, where its internal surface adheres to the contained viscera.

3dly. The generality of surgeons will, perhaps, allow that it may be united, but not firmly enough to prevent the recurrence of the hernia, and may apprehend that in case it should recur, on account of the altered state of parts, strangulation would take place. To such objections I reply, that reasoning on those radical cures which have occasionally been produced by the pressure of a truss, and commonly have endured through life; and considering the analogy of cases where the sac and contained parts adhere so firmly together, as absolutely to be inseparable without the knife, it seems improbable that the adhesion of the neck of the sac should not be firm enough to prevent a recurrence of the disease; and that the danger apprehended from the altered state of parts, and the chance of another descent, is at least counter-balanced by that peril to which every person, subject to the occasional descent of a hernia, is exposed.

4thly. It is not clear to me, that in performing the operation (which, of course, can never be undertaken but when the parts have been previously returned into the abdomen) that any advantage arose from making the incision the whole length of the hernial sac, as was anciently

 done,

done, and which does not appear to have met with the disapprobation of Mr. Sharp; an incision large enough to bring fairly into view the upper part of the sac, close to the abdominal ring, is all that can be rationally useful; for it is a firm union of the neck of the sac alone, that can prevent the hernia from falling down again, and consequently must be the real object to be desired. An incision unnecessarily large, a superfluous number of stitches (as I consider all more than one must be, just as more than one ligature to the mouth of a blood-vessel) can but tend, by their irritation, to augment the inflammation, bring on suppuration, and even gangrene of the parts.

5thly. That the neck of the hernial sac, after it has been fairly exposed by dissection, ought to have one ligature only past through it, immediately before the anterior part of the spermatic cord, and close to the abdominal ring, and that it ought to be tied just as we tie the ligature of an artery. I cannot apprehend that any dangerous constitutional symptoms would be likely to follow such a small wound as would be requisite, or making a ligature on a part of such little importance to the body as a hernial sac; nor could any but the most unskilful surgeon run any hazard of wounding the spermatic vessels.

6thly. I conceive, that gradually as the success and efficacy of this operation might be evinced, surgeons would be warranted in practising it in almost every case of reducible bubonocele, and even other hernia, for which a truss is at present worn. But, as it would be too bold to advise its performance in such an unbounded degree, we perhaps might feel ourselves authorized at first to make the attempt, after the manner above hinted, only in certain cases, where, as Sharp observes, people are so uneasy as to expose themselves to any measure, in this circumstance, for the hopes of a radical cure. If found once efficacious, it may prove so a hundred times; and, at any rate, I see no reason why, after performing the common operation to relieve a strangulated bubonocele, that opportunity of making a ligature on the neck of the hernial sac should not be taken, to learn whether a radical cure would not oftener follow it than is at present the case.

Lastly, I conclude in the words of Sharp, that it must in its nature be more effectual than the caustic, and less dangerous than the common operation for the Bubonocele, besides it will be much less liable to a relapse, which the usual operation for the Bubonocele is very subject to. I am not unaware of the two unfortunate instances of the operation

operation done in France by M. Jean Louis Petit, and *par un de ses Confreres;* nor of the two successful operations of the royal suture done by the above gentleman and a surgeon at Orleans; but as that mode of operating is totally different from the one here suggested, these cases can have but little relation to the question of, whether, when done in the best way, this attempt to relieve from a burdensome disease numbers of our fellow creatures, ought to be for ever abandoned as dangerous and ineffectual?

S. C.

January 8, 1803.

Case of Gun-Shot Wound; *communicated by* Mr. John King, *Surgeon, of Bath.*

On the evening of the 5th of November, 1802, Jacob Robbins, son of Mr. Robbins, baker, at Walcot, had the misfortune, whilst a spectator at a bonfire, &c. to stand parallel to a loaded gun-barrel, which was fixed in the ground, and when fired off, its contents struck on the young man's face, and produced a wound of a lacerated description. In this state, he was immediately brought to me, very languid from hæmorrhagy of the maxillary and other arteries, yet not alarming on that account, so as to demand any prompt application by ligature, or powerful styptic.

On inspecting the wound, I found it very deep, reaching high up towards the orbitar portion of the os frontis, and scaling along the nasal internal surface of the maxillary and palate bones, breaking down the vomer and crashing a very large portion of the os ethmoides.

The teguments were lacerated in the form of a triangle, commencing at the transverse frontal suture, and extending in a line direct to the margin of the upper lip; then proceeding obliquely from the frontal suture across the maxilla towards the angle of the lower jaw.

Another laceration was directed from the adipose pillar which sustains the septum nasi in a parallel line to the middle of the cheek; and part of the substance of the integuments were shot away, together with the cartilage which constitutes the septum.

The nasal process of the os maxillare was fractured, the orbitar process was cracked and loosened, and yet the eye was not in the least injured; not even did it assume in-

 flammation

flammation, though an epiphora, the consequence of inflammation in the lacrymal canal, ensued. The spines of the maxillary bones, which with the vomer, form part of the nasal division, was broken down, and the square part of the maxillary basis on one side was depressed, but not very importantly.

The sinus, or Highmore's antrum as it is termed, was laid completely open, and portions of bones which form that cavity were taken away; part became carious, which, with the sloughing of its inner membrane, afforded a most offensive discharge, distilling through the nostrils, and behind the arch of the palate, into the throat and mouth, so that the surrounding bones, which assist in the formation of the sinus, were also shaken; notwithstanding, no inflammation invested the alveolar processes of the maxilla, only just enough to excite the pain of distension; indeed, it was a matter of surprize that neither the teeth nor alveolar processes were displaced, though the roots of the teeth were exquisitely sensible from the proximity of the injury inflicted, and the rupture of nervous parts. In the destruction offered to these parts, it was impossible for the os spongiosum inferius to escape, and likewise the os spongiosum superius, in its inferior part; therefore an obstruction in the lacrymal canal was the first thing to be expected, as the lower extremity of that canal must have been destroyed.

Thus the lateral cartilages of the nose, the os nasi, the nasal portion of the maxillary bone, and the cartilage constituting the septum nasi, were extruded, partly inflected back on the cheek, and partly sinking down over the mouth and chin, exposing to view the whole cavity from the internal nasal surface of the ossa maxillaria and palatina to the cribriform cells of the ethmoid bone, so that the os ethmoides was very materially injured. The ossa palati, and the palatine portions of the maxillary bones appeared to have suffered chiefly from contusion, as an ecchymosis was apparent on the concave surface of the palate.

In examining the excavation produced by the breaking down of so much solid parts, my attention was directed to the removal of every loose portion of bone and cartilage; after these were separated and extracted, I approximated, by means of the interrupted suture, (supported by strips of adhesive plaster) all the integuments that were capable of adjustment, so as to give something of form to this "rudis indigestaque moles;" after which I passed a bougie into each nostril, to maintain the ordinary passages, and to form

a sort

a sort of conduit for blood and matter. The bougies being doubled at the external extremities, were caused to rest on the maxilla superior over the incisores teeth, which served to keep the nose elevated, and to dilate the nostrils.

I had nothing to fear, however, from the future confinement of matter, as that would in part easily escape behind the palate into the mouth and throat, and in part by the nostrils.

I had in former instances of lacerated wounds, (where the contusion of surrounding parts was great, and the pain considerable) experienced so much the benefit of cooling applications in the first instance, that I resolved to apply compresses of lint soaked in the aq. litharg. acet. c. for the first twelve hours; the re-action in such cases being very great and oftentimes injuriously so, destroying all the good to be expected from sutures.

The re-action is gently obviated by these means, yet sufficient excitement is allowed to produce adhesive and suppurative inflammation; thus much time is saved in the future regeneration of solids, which a too enlarged suppuration always destroys.

The union by the first intention, is never more desirable than in wounds of the face, yet as so much destruction of parts was effected, it could hardly be expected throughout the course of so many sutures as were made, yet the parts united, beyond our hopes.

The use of cooling applications in lacerated wounds is never to be persevered in, whenever the re-action on the parts becomes tolerant, when the fear of impending gangrene is subsided, when the pain diminishes, and the tumefaction is not excessive, and the heat and redness are moderate. Whenever these circumstances occur, or promise to occur, the suppuration is then to be forwarded by gently stimulant applications, and by the accumulation of heat in the parts; with this intention a warm poultice covered with a little ungt. picis, is very proper; and where the solution and separation of membrane and cartilage are to be expected, and consequently much offensiveness of discharge, a few drops of spt. terebinth. may be mixed with it. By these applications, aided by the use of strong antiseptic fomentations, composed of camomile, wormwood, poppy heads, &c. frequently renewed, a kindly suppuration ensues; but these observations may perhaps be thought too much in detail.

On enquiry respecting the faculty of smelling, as so much of the Schneiderian membrane was torn, so the ol-

 factory

factory power was lost; but as nervous parts recruit and regenerate, as well as muscular, that sense will no doubt in some degree be repaired.

From the violence offered to the bones of the nose, from their continuity with those of the head, it was to have been expected that some derangement might have arisen to the function of the sensorium, especially as the ethmoid plate, with the caput gallinaginis, are in immediate proximity, and serve to sustain the anterior lobes of the brain, yet no symptoms of concussion took place for a moment.

From the sieve-like structure of the os ethmoides, we may reasonably induce, why no disturbance occurred to the senses; had this bone been of a compact solid texture, the shock must have been participated by the brain; but, fortunately, the resistance to be overcome, by the force applied, was not great, and that part of its force was likewise exhausted on the nasal process of the maxillary bone, as well as on the arch of the nose; and as the anterior nasal suture was split in two, so the lateral integuments of the nose were surprizingly spared, a very favourable circumstance for the adjustment of the features.

It is evident from the destruction of so much solids, that the void occasioned was very considerable; and from this circumstance, as there was at present no abolition of the senses, I augured that there would be none in future, as any resistance by compression was removed from the nature of the accident. As the arterial ramifications, which are distributed to the bones of the nose, and enter their substance, were shortened at their principal trunks, therefore desquamations and a solution of some portions of bone which yet remained, must be the consequence; but having extracted all the loose fragments, I did not expect any considerable exfoliations, but on the tenth day I extracted a loose portion of the os ethmoides, where it ascends upwards to the cribriform plate; and from the acute pain always attendant on the use of the probe, the olfactory nerves were no doubt exceedingly irritated, or even ruptured.

Notwithstanding the destruction to the nasal process of the maxillary bone, to the orbitar portion which was elevated above the circumference of the orbit, to the inferior os spongiosum, and therefore to the ductus nasalis, so as to induce considerable inflammation in that canal, yet, on examination per nasum, and also by a fine probe insinuated into the inferior punctum, I was convinced that the

the lacrymal canal, though shortened in its passage, from its inferior extremity being torn, yet that, on the subsidence of the inflammation, the tears would again resume their natural course, we should have expected from the continuity of the os unguis with the nasal process of the maxillary bone, as well as from its lateral connection with the os spongiosum superius, that the os unguis must have been sacrificed, but the protection which the superior and inferior part of the orbit afforded, and the strong adhesion which the *membrana sacculi lacrymalis* acquires, by its intimate attachment to that slender bone, served to support it in its situation amidst surrounding demolition.

As the vomer and nasal lamella of the ethmoid bone serve to sustain the maxillary and palate bones, and from the concussion which the maxillary basis received, there will no doubt remain, for some time, a considerable impediment to the mastication of hard and solid food; but as the parts consolidate more and more, fresh exertions, and the effect of habit, will in time remedy that evil.

At the end of three weeks from the accident I found the bone denuded and sonorous, just over the roots of the incisor teeth; and by assisting its desquamation with the point of the probe, it soon came away.

In regard to the epiphora, the occlusion of the eye-lids continued for a month, owing to the diffusion in the cells of the eye-lids, and the weeping was likewise *not constant*. The lacrymal sac was exceedingly distended, so as indeed to threaten suppuration, and the secretion in the sac becoming very thick, served as a mucus plug to the lacrymal ducts, whereby the puncta were stopped up; but by frequent pressure with the finger on the sac, and irritatives to the pituitary membrane, the contents at last made their way through the nasal duct, (and continued so to do during the cure) by the side of the maxillary bone.

From the fracture of the maxillary bone, in its nasal and orbitar portions, the fossa rose a little out of the circumference of the circle; but as each part still enjoys a relative correspondence, so the epiphora will soon decline, and, indeed, was quite recovered, till the patient took cold, on his returning to his accustomed occupation, which he was able to do in the sixth week from the accident.

From the detail of this case, it appears to me, that cooling applications in the first instance, though to an extensive lacerated wound, had the desired effect of obviating too strong a re-action on the parts, and therefore, in all probability, prevented a suppuration of the lacrymal sac,

sac, and perhaps a genuine and permanent fistula lacrymalis; but as the animal vitality is weak in the integuments of the nose, therefore in so lacerated a wound, the re-action must for a short time, be just moderated to prevent its destructive powers. As soon as the first re-action is managed, there is not much to be apprehended from any succeeding ones, for the parts are afterwards disposed to meet the increased excitement. But as in all osseous and cartilagenous parts, the circulation is slow, so to produce a speedy cure, it is necessary to renew frequent local impulsions, by stimulating the system and the parts themselves; by so doing, the arterial ossific ramifications dislodge the parts, destined to separate, and therefore very speedily produce a consolidation of the læsed parts.

Perhaps the reader will think I have detained him too long, therefore I shall only add, that the medicine our patient used during the whole cure, after the first twenty-four hours, was the following, viz.

℞. Extr. cinchon. flav. ℈ij. ad ʒj vin. rhab. ℥ss. aq. menth. pip. ℥vijss. ft. mist. cujus sumt. æger totam omnibus 24 horis.

And that the only local stimuli, after the separation of unsound parts was effected by suppuration, were warm water forced from the nose into the throat and mouth at every dressing, and the ungt. picis with spt. terebinth. as the dressings themselves.

Bath, January 13, 1803.

Observations on the Umbilico-Mesenteric Vessels, by Cit. Chaussier, *Professor in the Medical School of Paris; read at the Medical School.*

THE fœtus, he observes, is connected to the placenta by the umbilical cord, consisting of two arteries and a large vein, also by a mucous substance, and covered exteriorly by a membranous prolongation; we generally find also the uracus, a small membranous canal proceeding from the superior part of the bladder accompanying the umbilical vessels, and running along the cord opening into a membranous neck called alantois. The disposition and uses of these vessels are too well known to require any particular description; but when we cautiously open the abdomen of certain animals who have died in utero,

or

or shortly after birth, we may perceive two other small thread-like vessels, which are sent off from the mesentery, and running toward the umbilicus, where they seem to terminate, and for which reason they have been termed umbilico-mesenteric vessels. On injecting these vessels with oil of turpentine or mercury, we discover that one of them is an artery sent off by the superior mesenteric, the other somewhat larger, a vein going to the right and opening into the mesenteric, near the trunk of the vena portæ; we may observe too, that these vessels do not simply run from the mesentery to the navel, as their name would seem to indicate, but after proceeding the entire length of the umbilical cord, and arriving at the concave surface of the placenta, they separate, divide, and ramify, on a membranous bladder of an oval shape, lying between the chorion and amnios, and perfectly distinct from the alantois. This vesicula, which had been remarked by Needham, and which had got the name of vesicula umbilicalis, is very remarkable in the first periods of gestation, when it is found filled with a diaphonous fluid; the quantity of this fluid diminishes as gestation advances, and after a certain time the sac, or bladder, becomes completely empty, the sides collapse, and nothing is perceivable but a membrane with ramifications of vessels running on its surface. After birth, the portion of these vessels which lie within the abdomen become obliterated, so as to leave no trace whatever of their existence. This appearance, as we have now described it, had been in part seen by Fabricius, Severenus, Bartholin, Duverney, &c. in the dog, cat, lion; and Needham, who described it with much accuracy, found it in the rabbit. Cit. Chausier has seen it in birds, &c. but it is desirable to know if it exists in the human subject. If we confined our researches to human fœtuses arrived at their full term, we should be led to declare that they did not exist; they have been, however, found by many anatomists; and Haller found them in a fœtus arrived at the full term.

Cit. Chaussier relates, in the Memoirs of the Academy of Dijon for 1782, that he found in a fœtus of seven or eight months, not only the artery but the vein; and in last Germinal he shewed to the Society of the Medical School these vessels, which he had injected, and traced to the portion of cord without the abdomen, in a fœtus which died some hours after birth. It is, no doubt, difficult to find these vessels at a period so much advanced; it would seem as if this apparatus existed from the very earliest periods

riods of developement of the fœtus; Cit. Chaussier always found it in the fœtuses he had occasion to examine of 30, 40, or 60 days; in the smallest embryos this bladder equals in size a small cherry. Albinus, Sandifort, but especially Wresburg and Hunter, have described these appearances; and their observations have left no ground for doubt upon the subject.

From these and many analogous considerations, which Cit. Chaussier has frequently explained in his public Lectures, he thinks that the vesicula umbilicalis, as well as its vessels, exist equally in all animals; that this apparatus is of *some* use in the nutrition and developement of the embryo; but becoming useless in the later periods, it is obliterated and effaced, as we find to be the case in other temporal parts, as the membrana pupillaris, &c. Any traces of them existing at a later period is merely accidental.

Paris, Jan. 2, 1803.

Observations on Cataract; communicated by Mr. Morley, *Member of the Royal College of Surgeons.*

In the case of Elizabeth Rimmington, which appeared in your Journal for December, Mr. Leeson was disappointed at the failure of the operation which he performed. The eye, after it, having no visible appearance of disease, and the iris contracting or dilating on the admission or exclusion of light, this gentleman supposes the remaining defect of vision to be occasioned by the capsule of the chrystalline lens not being absorbed, as there was no apparent opacity of this membrane, so as to obstruct the rays of light acting upon the retina. I must beg leave to differ from him in that respect from what experience I have had in diseases of this nature; I sometimes have had reason to suppose cataracts were combined with amaurosis; sometimes the latter disease only existed in one eye, although both were attacked by the former. Now, if a person is not very cautious in his examination, he perchance may operate upon the wrong one; and notwithstanding the operation is performed with the greatest judgment, and the lens completely removed, still he will be disappointed, and his ultimate wishes will not be obtained. The neglect which may occasion this misfortune is, not closing the eye-lids of one during the examination of the other; for if both are

exposed

exposed to the stimulus of light at the same instant, the iris of both will be mutually affected. The above observations are not founded merely upon hypothesis, but upon the following fact. A woman, some little time back, applied to me for the restoration of sight; on examining, I found nearly the whole cornea of one eye to be opake, in the other a complete cataract, and the iris dilating and contracting to the different shades of light; but, when I closed the one with the opake cornea, no such action took place; I immediately concluded amaurosis was the cause, and the motion of the iris was occasioned by the rays of light insinuating themselves obliquely between the opake cornea and tunica albuginea of the other; why this should happen, I leave to the better judgment of others, probably the case of Elizabeth Rimmington still remaining in darkness is gutta serena in the eye which has been operated upon.

Wellingan, December 21, 1802.

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

IN Vol. VII. Numb. xl. page 507, of your Journal, is a paper by Mr. Ryan, of Kilkenny, on the use of Acetite of Lead, in cases of Hæmoptysis, from which it appears to have had very beneficial effects; and he is anxious to show that no ill consequences took place, although given in much larger doses than are commonly prescribed.

If the following facts can have any tendency to bring into practice a useful medicine, you may think them worth a place in your useful Miscellany.

An apprentice of William Ewing, a cooper, in this neighbourhood, had an ulcer on the fore part of the tibia with considerable inflammation, for which he was ordered a poultice with acetite of lead. As this article is used by linen-printers, he got from an adjoining print-field, a lump which could not have weighed less than a pound, being, as he declared, the size of his fist, which was none of the smallest.

When the boy came home, he laid down this piece on the kitchen table, and left it. Shortly after his mistress, an old, short-sighted woman, came in with cabbage for the

the family dinner, laid them on the table upon the acetite, and cut them down with a knife; by this operation both were incorporated; the whole was then put into a pot, boiled with potatoes, and chopped into a mass for dinner.

This dish was entirely eaten by the master, mistress, a daughter, her husband, and two apprentices.

After dinner the lad wished to prepare his poultice, but the materials could not be found. As a curious taste had been observed by them all in their food, they became alarmed; and on examining the table, it was evident that the sugar of lead and cabbage had been bruised together, as some in a powdered state still adhered to it.

I was sent for directly, and was soon with them; an emetic was given to five of them, which operated well, and they never found any further inconvenience; the sixth, however, one of the apprentices, as he felt nothing uneasy about him, refused to take any thing; but although the whole he had taken remained in his bowels, he never had the smallest complaint, and was as regular in his belly as before.

In Vol. III. Numb. XVI. of your Journal, you have published an extract from the Annals of Medicine, of a case of mine, where the uterus was extirpated with success; in Vol. VII. Numb. XXIX. a case is related by Mr. Watkinson, of the fatal termination of a similar operation, arising from the slipping off of the ligature, with a proposal for passing a needle through the upper part of the tumour. In the case that occurred with me, the ligature was a very strong one, and firmly applied for six hours before the operation, and no difficulty whatever took place in retaining the divided vagina till the blood vessels were secured. Were I, however, again to perform the operation, I would allow the original ligature to stay on; and without taking up any blood vessels, let the retraction take place, but leave the ends hanging out beyond the os externum for four or five days, and then pull them away if become loose.

If, however, this mode should appear uncertain, there can be no doubt but with a crooked needle every blood vessel can be secured with ease; and there never will be any necessity for employing an operation so dreadful in the eyes of every patient as the actual cautery.

My patient is still living in the neighbourhood of Glasgow, in good health. I am, &c.

Dumbarton, Jan. 12, 1803. ALEXANDER HUNTER.

To the Editors of the Medical and Phyſical Journal.

Gentlemen,

Some time ago I had the pleasure of laying before the readers of your valuable Journal, the Case of John Rouneberg, a paralytic patient, who was sent to me by the late Dr. Garnett, from the Mary-le-bone Dispensary. I then stated, that he had received much benefit from six applications of the Air-pump Vapour-bath; and that I could not, at that early period, have omitted noticing the case, without calling in question the opinion of the Doctor.

The patient, however, gave me the slip, and got a situation somewhere in Somersetshire, as a cook, which had been his business before his misfortune, so that I heard no more of him. There was every reason to expect, from the progress which had been made by six applications, that I should have been able to have given a very good account of the case long before this period; but there is the less cause of regret, as I have it in my power to lay before your readers the following still more apposite case.

October 12, 1802. Richard Jacques, No. 6, Little Mary-le-bone Street, about eighteen months ago, lost the use of both his hands; of the two, the right seemed most affected; on the back of it there was a large ganglion-like tumour, which, with other circumstances, made the case resemble that species of paralysis which succeeds the painter's colic; though we could not discover that he had been exposed to the influence of lead.

He had been a patient of the Mary-le-bone Infirmary for six months, and of the Middlesex Hospital for three; of course, all the common remedies had been skilfully applied, but unfortunately had not produced the desired effect. He was not, at the above date, any more than he had been during the whole existence of the affection, able to exercise his occupation, that of a shoemaker. In the two months preceding the above mentioned date, the application had been made two and twenty times. He received no great benefit with respect to motion for the first twelve times; though the tumour on the back of the right hand had been gradually decreasing. At this period, however, different sensations took place. The susceptibility of the parts had become much more considerable. He was seized with *cholera morbus,* a disease at that time prevalent; after which the bowels, hitherto in a torpid state, became more naturally irritable. His countenance lost somewhat of its leaden paleness. The secretion of bile seemed evidently

evidently more considerable. A degree of painful itching in the affected parts, and considerable fever took place, exactly as happened in the case of Rouneberg; which, as in that case, was the cause of suspending the application for ten days. The amendment, however, was such as to make the poor fellow very solicitous to persevere in the use of the means. He has now so far recovered the use of his hands as to be able to make two pair of women's shoes per day, and there is every reason to hope he will be able eventually to finish three pair in the same space of time; which he was in the habit of doing before he had been seized with the complaint. I am, &c.

RALPH BLEGBOROUGH.

No. 330, *Oxford Street, Jan.* 18, 1803.

On the Use of the fixed Alkali in the Hooping Cough; communicated by Dr. NOEHDEN.

THE fixed vegetable alkali was first recommended in this disease by Dr. Stutz, whose observations on the use of that remedy, in several nervous disorders, were some time since communicated to the public through the medium of Hufeland's Journal. Dr. Memminger, of Reutlingen, is the first who successfully tried the fixed alkali in an epidemic hooping cough, which had frequently frustrated the known methods of cure. The following is the mode of treatment which he at last adopted. In the beginning he gave every two or three days, one after another, *Syrup Ipecacuanha of de Lassone* with *Vin. Antimon. Huxham*, to be taken by tea spoons, till it had produced vomiting three or four times. He then prescribed, according to the different ages of the children, from four to twelve grains of *Alkali fix.* in *Aq. Cinam. S. V.* with *Syrup. Cortic. Aurantior*; besides which, he ordered *Laud. Liq. Sydenh* to be taken three times a day, in a dose adapted to the different ages of the children. Warm baths, clysters, and the rubbing in of *Linn. Volat.* with *Tinct. Cantharid.* were used besides, as auxiliary remedies; and in the third stage of the disease the extract chinæ was given. In order to ascertain what was the effect of the alkali, when in combination with laudanum, and when given by itself, he used it without employing any other remedy, except a previous emetic, and he had the satisfaction to find, that it proved very efficacious; the most obstinate cough, which frequently lasts for three or four months, being moved by it within five or six weeks, without any ill consequences.

CRITICAL ANALYSIS

OF THE

RECENT PUBLICATIONS

ON THE

DIFFERENT BRANCHES OF PHYSIC, SURGERY, AND MEDICAL PHILOSOPHY.

Mr. Bell's Surgery, continued.

AN accurate knowledge of the arterial system forms so important a branch of the education of a surgeon, that our author dwells upon it with considerable, but not tedious minuteness; and previous to the consideration of aneurism, he lays before the reader, in the sixth Discourse, a general sketch of the arterial system and of the numerous inosculations whereby the circulating vessels are made to communicate through distant parts of the body.

The system of inosculation is one of the numerous beautiful contrivances of Nature for providing a remedy against some of the most dangerous injuries to which the human body is exposed; namely, interruption of the circulation through the great arteries, whether by disease or external violence. In all these cases it is well known, that the blood going to any of the extremities, if obstructed in its usual channel, finds its way through the minute inosculating branches given off from the larger artery above the point of obstruction, and thus supports the circulation necessary to the life of the parts, at first languidly, till these inosculating branches gradually enlarge, and from being secondary and subordinate ramifications, assume the office of principal branches, and at last become fully adequate to the purposes of life, growth, and perfect nutrition:

This important fact in the animal economy is now fully understood, and the valuable conclusions in the practice of Surgery to be derived from it, particularly with regard to the comparative safety of tying the larger arterial trunks, are equally familiar to the teacher and the practitioner. Mr. B. here describes anatomically the individual inosculations of the several branches of the circulating system, and lays particular stress upon three points in the arterial distribution which more peculiarly illustrate the doctrine of inosculation; these are the following.

1st. The communication between the axillary and the femoral arteries through the internal mammary, a branch of the former, which inosculates with the epigastric, a ramification of the latter. This arterial union between parts so widely distant as the upper and lower extremities is of peculiar interest, as it has been known to supply,

supply, in some degree, the want of an aorta, as is proved by a case cited by the author, of Mr. Paris, of the Hotel Dieu, wh found in a subject which he injected, a remarkable contraction of the aorta a little below the arch, a consequent unusual enlargement of the arteries on the fore part of the chest, and a complete inosculation of the dilated mammary with the equally enlarged epigastric arteries. The whole of this dissection, which is contained in Dessault's Journal de Chirurgie, is highly curious and important.

2dly. The collateral branches belonging to the arteries of each extremity separately considered, and which are sufficient to keep up the circulation in the limb when the principal trunk is obstructed. Thus, the subclavian artery, before entering the axilla, sends off the thyroid and cervical arteries, which ramify round the joint, and mix their extreme branches with those which come off from the brachial artery, as may be shewn by tying the axillary artery and injecting the subclavian from within the thorax, when the wax will be found to run freely into the brachial artery below the ligature in the axilla. In like manner, in the lower extremity, the ischiadic, thyroid, and pudic arteries inosculate with ramifications from the profunda, and will supply the circulation when the external iliac artery is obstructed.

3dly. The lower joints of each extremity, the elbow and knee, are surrounded with their particular inosculations, which, though naturally more minute than those of the upper joints, so as to be shewn with difficulty by injections, are nevertheless capable of such rapid enlargement after obliteration of the larger arteries, as to supply the lower parts of the limb with perfect ease; as has been proved in numerous instances of operation for aneurism and other surgical cases, where it has been requisite to obstruct the larger arterial trunks.

Many desultory observations, and a profusion of cases, are added by the author, in illustration of the general principle of Inosculation; a principle now so thoroughly understood as to have introduced a much greater freedom in surgical operations in the tying of large arteries, and a full conviction of its general safety, as far as the future nutrition of the limb is concerned. Much has been done in a physiological point of view by Mr. Hunter's operation for aneurism, in explaining the vast resources for the nutriment of limbs which Nature possesses, in the power of rapidly enlarging inosculating branches and converting them into principal channels for the blood when the main trunks have been obliterated. The importance of this doctrine is very amply enforced by the author in this part of the work, and it immediately precedes the chapter on aneurism with very great propriety, as many circumstances relating to this most interesting disease are closely connected with and explained by the system of arterial inosculation. Several drawings of the arterial branches *in situ*, and of their mutual connexion are added, to assist the reader in the anatomical explanation.

The seventh Discourse begins the subject of Aneurism with a description

description of the history and causes of this disorder. The spontaneous aneurism arising from a diseased and ossified state of the arteries come the first under consideration, and the example is given of the slow, gradual progress of aneurismal tumour in the ham, at first so small as to give no alarm to the patient, but by degrees increasing with all its formidable and characteristic symptoms; and when arrived at that point when the operation can no longer be delayed, suddenly succeeded by fresh aneurism in other parts of the arterial system, and finally proving fatal, without affording a chance of a permanent cure by any of the resources of art. Not unfrequently dissection shews an actual and manifest disease of the arterial system, the whole of which is thickened and brittle, and its cellular substance loose and spongy, with spots of ossification besetting the great arterial trunks, giving them the appearance of the knobbed crooked branches of an exhausted tree. Of this a very illustrative drawing is given by the author.

This predisposition however, he observes, seldom degenerates into aneurism without some degree of direct violence; and on this circumstance the author lays considerable stress, as it serves to explain the cause of the morbid appearances which attend the complaint. In all parts of the body there are weaknesses and imperfections which we are made sensible of only by the parts being hurt. Aneurisms of the limbs are never known in women; their system is lax, and they are generally exempted from those exertions by which the arteries are often injured or burst. Aneurism is rare in young men, and frequent in the middle stage of life, when the arteries become harder, when the muscular strength is unabated, and the occasional exertions of the limbs very violent. Aneurism is almost peculiar to men in the lower ranks of life, to soldiers, porters, labourers, miners, and those who work at laborious trades; and there are few of those enlargements of the artery which cannot be distinctly traced to some external injury, some blow, sprain, fall, or violent exertion of the limb. Hence the author infers, that even where no very decided disease of the arteries is present, a violent muscular exertion, unconnected with external wound, may burst the muscular coat of the artery and produce aneurism, the growth of which (confined as it is by the strong cellular sheath which encloses and strengthens the vessel) is often so slow and gradual as to have the appearance of spontaneous disease. Several cases are given in illustration of this particular point, namely, the slow growth of aneurism after an actual rupture of the artery; and the practical inference which the author deduces, is the importance of attending to the consequences of obscure sprains and internal injuries of the limbs, particularly the lower extremity, when succeeded by deep seated tumours, before the muscles, bone, and adjacent cellular substance are brought to that dreadfully diseased state which attends extensive extravasation from a ruptured artery.

A very interesting case, and several highly important observations follow, relating to the complication of caries of the bone, combined with, and depending on, aneurism of the contiguous ar-

tery. The case is communicated by Dr. Jeffry, anatomical professor at Glasgow:—A woman was ridden over in the streets, her arm broke in two places, and the bone much shattered. It remained absolutely neglected for six weeks, at which time it was examined, and found to be much swelled by a tumour reaching from the top of the shoulder to the arm, and pulsating in its upper part. It was opened in this spot, and pure blood flowed out; the wound however healed up, but the patient, after being apparently much neglected for five months, died. On dissection, which was eight months after the first accident, the arm was filled with a profusion of mixed and putrid blood, only two inches of the lower part of the bone retained its natural form, all the middle part of the bone was destroyed, and the head only remained on the upper part of the tumour, but with its cancelli quite eroded, nothing being left but the mere shell. Through the whole length of the bone the cancelli were dissolved, and many pieces of the bone were found in the heart of the tumour, exhibiting a most perfect specimen of caries produced by the presence of the extravasated blood which prevented the union of the callus; however, in the midst of this destruction, the periosteum had retained its life, and had made vast efforts at ossification, so as to form, in the length of the tumour, a large flat bone (not a remnant of the humerus, but a fresh production) of a fourth of an inch in thickness, three inches and a half broad, and six inches long, and in appearance not unlike the parietal bone of the skull. Beside this larger piece, the whole sac was full of specks of ossification within the centre of the membranes. The inosculating arteries had also performed their office, and had enlarged to a sufficient size to maintain the circulation.

At the conclusion of this discourse the author ingeniously infers, that, as aneurism more frequently arises from violence than disease, the lower extremity is more liable to this complaint than the upper, on account of its infinitely superior muscular force, whilst the artery of the thigh is long, tortuous, and not possessed of any power of resisting injury proportioned to the muscular exertions of the limb. The artery of the ham too is particularly endangered by the manner in which it perforates the tendon of the triceps.

A most important question occurs on the subject of aneurism, namely, whether amputation of the limb affords the patient a considerable chance for life. The ill success of this dreadful remedy has long made surgeons hesitate on its eligibility, even before the modern operation of tying the artery high up in its course was invented by Mr. Hunter. The authority of Guattani (which Mr. B. cites with partial prolixity) is strongly against amputation, and our author supposes an *inflamed* state of an aneurismal limb to exist, and to be an objection to amputation, from the great risk of gangrene; in the same manner as the inflammation succeeding to violent external injury also forbids amputation. In the latter case the inflamed state is produced by the extensive injury inflicted by extraneous violence; in the former (the author alledges with considerable force) a similar state is occasioned by the generally increased

creased action of the inosculating arteries, on which the whole force of the circulation is thrown when the principal trunk is ruptured, and obstructed by the pressure of extensive extravasation, and in both the danger of gangrene from *active* inflammation is most imminent.

The method of operating in aneurism proposed by Mr. Hunter, and now in actual practice, but with some considerable variations, next engages our author's attention. The most important point in this operation is to determine whether the artery should be merely tied, or whether it should be cut through after the ligatures have been applied. The former was the practice of Hunter, and most of the surgeons who immediately imitated him; but the frequency of secondary hæmorrhages, from ulceration beneath the ligature, and the difficulty of obliterating the artery by simple ligature, rendered several of the most promising operations finally unsuccessful. On the other hand, when the artery is cut through, the state of the parts resembles more closely that of common amputation, in which the safety and practicability of securing even the femoral artery by simple ligature is fully proved. Hence it is that there appears good reason for adopting the method of dividing the artery before the wound is brought together; and the experience of Mr. Abernethy, and several eminent modern operators, appears in this respect perfectly to coincide with that of our author. We cannot however conclude this subject without directing the reader's attention to one circumstance consequent upon the division of the artery, which is, the danger of the ligature slipping off the divided end of the vessel, through the powerful retraction which speedily takes place, and which involves the hazard of almost instant death from the copious hæmorrhage through the newly opened vessel. For this there appear to be two remedies; the one, to include within the ligature a certain portion of cellular membrane along with the artery; the other, the simple, but apparently effectual, contrivance proposed by Mr. Cline, jun. of transfixing the artery with a needle, and passing by its assistance through the substance of the vessel, the same ligature which has already stopped the flow of blood by its compression. *(See the Medical Journal, No.* 41.*)*

In the last Discourses on the subject of Aneurism, the author treats of wounds of the arteries, and of the aneurism which forms over the wounded artery, along with general rules for the operations on great aneurisms and various anomalous cases. We shall not follow him through the whole of these pages, in which many valuable practical observations are given with freedom and spirit; but involved, as usual, in a profusion of words, perplexed by repetitions and want of method, and loaded almost to incumbrance with cases and quotations from writers of different ages.

Among the anomalous species of aneurism is that *by anastomosis*, as the author terms it, or an aneurismal tumour formed and fed by, not a single artery, but a great variety of vessels, all of which communicate freely with each other, and also pour their contents into

into the tumour, and give it a most vigorous pulsation. If one of these tumours is opened, the hæmorrhage is prodigious, and the number of vessels which supply it is so great as to render all attempts at securing them individually by ligature, abortive. A curious case of this species of aneurism here related, is that of a young woman who has a tumour within the pelvis, lying between the rectum and vagina, principally inclining towards the left side, so that on introducing one finger within the rectum, and the other within the vagina, the pulsation may be felt between them. It has subsisted for some years, during which she has had two children. The lower hæmorrhoidal, and the pudic arteries, appear to have the greatest share in producing this aneurismal tumour, and by their increased activity the inosculations between them are so much enlarged, that pretty large arteries may be felt running a tortuous course along the walls of the rectum and vagina.

The cure of this species of aneurism, when seated on the forehead, or in accessible parts, is not, as our author observes, "to cut into it, but to cut it out." As it is a mere congeries of active vessels, small in dimensions, and almost innumerable in quantity, the interruption of particular vessels will not reduce the tumour; and, above all things, this variety of disease should be treated in its earliest stage, when alone it easily admits of radical cure.

The last part of this volume is occupied by the interesting subject of Fractures of Limbs, the analysis of which, with that of the expected second volume of this important work, we shall defer to a future opportunity.

A Collection of Papers intended to promote an Institution for the Cure and Prevention of Infectious Fevers in Newcastle, and other populous Towns, &c. &c. by John Clark, M. D. *Part the Second.* Newcastle upon Tyne.

In a former number of our Journal, we briefly noticed the first part of this collection of papers, most of which were controversial between the medical gentlemen of the large and important town of Newcastle. The question in agitation was a local circumstance relating to fever wards, which involved the important consideration of the distance to which the contagion of infectious diseases in general, and of typhus fever in particular, could extend in ordinary cases, so as to be actively detrimental; a question of infinite moment wherever this disease is to be checked in its career by the assistance of medical skill, or prevented by civil regulations from extending its ravages.

The editor of this collection of papers adopts the opinion of the comparative security from contagion, which common precautions will ensure, and of the very limited extent to which the contagious atmosphere of the sick can extend; and in this second part numerous testimonials of the truth of this doctrine are given from authorities which have generally been deemed to carry the greatest weight. It is not necessary, however, again to direct the attention

of

of our readers to these, but rather to the concluding part of this collection, containing summary remarks on the means of exterminating typhus fevers and other contagious distempers, from towns, villages, boarding schools, &c. together with a supplement, containing numerous hints and remarks on the management and internal regulation of hospitals.

These pages, though few in number, are replete with good sense, and exhibit in their author a liberal humanity and public spirit, which must entitle him to the esteem and respect of all his fellow citizens; and of those in particular, whose names fill up the honourable list of the supporters of the benevolent institution, the improvement of which appears to be so warmly agitated.

A Letter to Sir Walter Farquhar, *Bart. on the Subject of a particular Affection of the Bowels, very frequent and fatal in the East Indies.* 1801. 8vo. pp. 33.

Some of the diseases that give the greatest alarm, by the direful rapidity with which they hasten to a fatal termination, and perplex the most by the indiscriminate urgency of opposite indications, are those which are produced in the constitutions of the inhabitants of cold and temperate regions, when removed to the burning influence of a tropical sun. Of this we have unfortunately had too many examples before our eyes; and we have still much, if not all to learn, respecting the best methods of guarding against these species of hazards to human life, necessarily incurred to a considerable extent, by our intimate connection with our East and West India Colonies.

An accurate observation of disease, and a fair trial of the various remedial powers, unbiassed by preconceived theory or partial judgment, are the contributions which we look for from our medical brethren, who devote themselves to the dangerous service of the tropical climates. Nor have they, at any time, been remiss in their endeavours to improve the knowledge of their art; and we cannot but regard the short description before us, as a very important and interesting communication, rich in matter of fact, and deserving of considerable attention.

The author, Mr. Fra. Duncan, relates the history of a very violent, and, hitherto, he conceives, unobserved inflammation in the bowels, attended with peculiar symptoms. The colon appears to be the part primarily and principally affected, and the inflammation is of the most active kind. The first symptoms are a severe fixed pain above the pubis, with extreme difficulty of making water, and frequently entire suppression of urine. The fever is very high, with unquenchable thirst and perpetual watchfulness; the pulse hard, frequent, and strong, like that of acute rheumatism, and the heat of the skin intolerably burning. The alvine discharge is considered by the author as affording a peculiar diagnostic symptom: There is from the first a violent and constant evacuation of a liquid

 matter,

matter, which he compares to *water, in which raw flesh has been washed or macerated.* This evacuation, the seat of the pain, which is fixed above the pubis, and the difficulty of passing urine, the author regards as the three peculiarly characteristic symptoms; and in the severest form of the disease, the pain and evacuation from the bowels appear to come on at the same time. The progress of the complaint is rapid and violent; tenesmus generally attends the latter stages, but delirium scarcely ever, till the very approach of death. The tongue is at first white and furred, afterwards perfectly black. The other concomitant symptoms are described with great appearance of precision and accurate observation. The period of a total termination varies according to the circumstances of the disease and the degree of attention which can be given to the patient. In the fatigue and hurry of a camp in active service, death often occurs on the fourth, fifth, or sixth day, and never later than the twenty-first. It is not contagious, but sometimes epidemic. It attacks the young, robust, and those of a florid appearance and sanguine habit. In the late campaign against Tippoo Sultaun, this disorder carried off some of the finest young men in the army.

On dissection, the portion of colon directly beneath the seat of pain, was always found thickened, eroded, and ulcerated, and where emphysema came on before death, the bowel was found either wholly or partially mortified. In some instances, the marks of inflammation were found to extend to the small intestines, mesentery, and peritonæum: the liver was sometimes affected, and portions of white matter, of the size of a bean, dispersed through its substance: The bladder was never diseased, notwithstanding the severity of the dysuria or even strangury during the complaint. The omentum generally shewed marks of severe disease, and was often found dissolved into a black and putrid mass.

The author distinguishes this complaint from dysentery and from enteritis, by several very important diagnostic signs, and, we think, fully establishes the peculiar nature of the disease which he is describing.

With regard to the treatment, the author, guided by the analogy of most of the other bowel complaints of hot climates, began by giving purgatives; but he uniformly found that *they did irreparable mischief*, by increasing the inflammation, exhausting the strength, and thus hastening a fatal termination without at any time mitigating the violent symptoms. Disappointed in this remedy, the author, with great judgment, had recourse to the frequent use of emollient and anodyne glysters, together with constant warm fomentations of the belly, and mild diluent drinks. Blisters relieved the pain for a time, but it generally shifted to some other part of the colon. Blood-letting was of essential service in moderating the first inflammatory symptoms, but required great judgment in its use.

After the fever and pain were moderated, opium was of most essential

essential service; as much so as it proved eminently mischievous in the first stages, whilst the pulse was hard and full, and the skin hot and dry; and this striking fact adds another most important example to the many instances, that shew the necessity of extreme caution in the use of opium in severe bowel complaints.

During the course of several fluxes in India, the colon is likewise subject to an inflammation, which the author terms secondary or symptomatic; and he takes some pains to distinguish it from the primary idiopathic disease which he has just been describing.

We have only to remark concerning this clear, simple, and highly valuable medical tract; that, in describing the peculiar pain of the abdomen, the author does not mention whether it is increased on pressure; and we could have wished a few more particulars concerning the appearances of the alvine discharge, especially whether it was attended with any peculiar smell or other marks, which have usually been ascribed to a state of acrimony or putridity.

The author concludes with great propriety: "To those young men who are preparing to go out to India in the medical profession, a knowledge of the facts here stated may be of some importance, and to them it cannot be deemed unseasonable in me to offer, what in their circumstances I should have gladly and thankfully received."

MEDICINA NAUTICA: *An Essay on the Diseases of Seamen; comprehending the History of Health in the Channel, for the years* 1799, 1800, *and* 1801; vol. iii. 8vo. pp. 507; *by* THOMAS TROTTER, M. D. *late Physician to the Fleet, &c.*

EVERY friend of his country, every one who forms a just estimate of the services of our brave tars, and of the importance of their exertions who guard the health of our fleets, must rejoice to see so able an advocate as Dr. Trotter continuing his labours to sooth their sick bed, and carry consolation into their retirement from the public service. Our Readers, we think, would have much cause to complain, if we passed over this interesting Work in our usual concise manner; we propose, therefore, to present them, at this time as well as occasionally hereafter, with a few extracts. The importance of the observations, which respect the health of seamen, will be collected from the manner in which, and the place where, they were made.

"The brave man," says Dr. T. "who exposes his life in the service of his country, has claims on the generosity of the public beyond every other competitor. Besides the dangers of battle, he has to contend with hardships and privations of all descriptions; and his diseases are of that class the most fatal in their issue. If therefore the language of truth and independence becomes any official situation, it belongs to the physician of a fleet or army. Of all conditions in human life, next to infancy, the sick bed is the most helpless. The finest examples of virtue have been practised there, as being the fittest field for the exercise of the most disinterested benevolence. To the medical profession, as connected with public

public service, this office is almost exclusively confined. While this evinces the necessity of correct and punctual attendance, it also shows how minute and perfect all arrangements connected with it ought to be. But it appears in this work, even in a political view, that the subject loses nothing of its importance. And if confidence is to be bestowed on the officers of health, their representations ought to meet with nice attention and redress. I have thus been zealous to record many of my applications for correcting abuses; for it may be a long time before any succeeding physician of a fleet can have the experience which has fallen to my share; and if they are not inserted here, the hint for improvement may be lost. God forbid that I should carry to the grave a single idea that could benefit the naval service of the country! From that service I am now to retire, where I have spent all the best of my days, and to which my studies have been faithfully devoted. It must now think of me as a man who can have no share in its future operations, but who will be proud of its remembrance as long as he lives."

After a striking contrast between the labours of the political historian and the task which devolves on the historian of health, Dr. T. proceeds thus: "Amidst those scenes of war, desolation, disease, and death, it becomes the task of the medical philosopher and historian to collect such occurrences as point out the best means of enlarging the sphere of prevention, and by selecting the most prominent and striking facts, to establish rules that may direct future travellers and enquirers in the same path. Such has been the avowed intention of this work; in the execution of which we have freely thought for ourselves on every subject under review, where we wish our labours to be measured only by the spirit of utility which we inculcate. This being the case, the fastidious reader, if he wishes to follow us, must lay aside all technical formalities, and that species of grimace that staggers to unmask official iniquity. Having thus regenerated himself, and no longer the slave of prejudice, he will be able to discern modern improvements from ancient errors, and will be convinced, that the practice of medicine may really confer a great deal of benefit on mankind, without prescribing a single dose of physic. I will then conduct him through the horrors of the impress service; the orlop prison of the Liverpool guardship, and the press-room of a Bristol tender; through the Royal William and Cambridge receiving ships, that have so often sent abroad the vapours of contagion. I shall then lead him through the spacious, clean, dry, and airy decks of a ship of the line; where disease is prevented by the perfect obedience of every precept that commands health, where disorder is subdued by masterly discipline, and where the frown of an intelligent and accomplished officer can do more in the correction of crimes and immoralities, than a cat-o'-nine-tails. He shall afterwards view the pride of Nautical Medicine, the Markham Sick-Berth; where a diet is provided, delicate, restorative, abundant, at the

seamen's

seaman's own expence, that far exceeds the slow-paced improvements of an hospital ward. He will remark, in our walks through hospitals, that we have not hesitated to examine corners of darkness where the eye of observation never peeped before; the kitchen, the pantry, the pent up bed-house, the clothes of infection unventilated and unwashed, have all been dragged into day, with a thousand other imperfections that marked those neglected institutions. But our scrutiny and corrections have not been limited to ships and hospitals. He will observe, that we have even claimed protection for the heedless seaman, in the hours of his recreation and pleasures on shore, against the sink of vice and drunkenness, to which he was exposed by a wicked police; and two hundred gin-shops have been shut in Plymouth Dock, that have called down the execration of every thinking being on a magistracy, that dared to profane the functions of its office, in the very moment when sedition was lying in wait to corrupt the defenders of the country.

"If in making these digressions from the usual track of professional inquiry, that others have either not observed, or disdained to explore, much human affliction has been prevented or relieved; the head of the brave seaman laid on a softer pillow, or a new path to improvement opened, a candid reader will overlook a casual ruffled feeling or angry expression, during a struggle with all the powers and prepossessions which stupidity, obstinacy, and malevolence have opposed against us.* At the same time, let the reader separate the act of the executive officer of health in a fleet from that of the private physician, and distinguish between the duty of a public censor, that ought to wink at no abuses, and the forbearance that may be expected from an individual. My future retirement will then be secure from persecution and misapprehension; while my declining years shall be solaced with the thought, and look back with pleasure on the laborious but virtuous task, of having contributed to the comfort and happiness of thousands."

[To be continued.]

---

* It is curious to observe the hostility which has been offered, from different quarters, to my measures of safety in the fleet. A lady of rank, who was in the custom of giving large dinners to small parties, when the scurvy, in 1795, had put in contribution all the lemons and oranges of the country, complained that none could be procured for *her company*. "It is a shame," said her ladyship, "that the nation's money should be expended in this way; Captain P. tells me that these things are not good for sailors; and, what is worse, this physician can persuade Lord Howe to any thing." Ladies of another description, namely, the *green* women in Portsmouth market, combined *not* to sell a cabbage, or any thing, to the physician's servant. "Your master," said they, "has spoiled our trade by sending all the *sallad* to Spithead." When the gin-shops were shut in Plymouth Dock, it was prophesied that I should be "*found murdered in the streets.*"

MONTHLY REPORTS.

Cases admitted under the Care of the Surgeon of the Finsbury Dispensary, St. John's Square, Clerkenwell, from December 10, 1802, *to January* 10, 1803.

Phlegmone Genu - -	1	Leucoma - - - - - -	1
Ophthalmia - - - -	1	Vulnera - - - - - -	3
Erysipelas - - - - -	4	Contusiones - - - -	3
Mastodynia - - - -	2	Combustura - - - -	5
Abscessus Axillæ - - -	1	Lues - - - - - - -	2
——— Perinæi - -	1	Schrophula - - - -	2
——— Genu - - -	1	Hydrarthus Genu - -	1
——— Scrophulosi -	4	Hernia Ventralis - - -	1
Paronychiæ - - - -	2	Hydrocele - - - - - -	1
Furunculus - - - -	1	Odema Scroti - - - -	1
Mortificationes Cruris -	2	Tinea - - - - - - -	1
Ulcera Cruris - - - -	14	Eruptiones Chronicæ - -	4
——— Capitis - - -	2		—
Ulcus Palati - - - -	1	Total	62

The diseases of the last month, as will appear by the above Report, have been of a very miscellaneous nature; no particular epidemic (in the department of Surgery) having occurred to occupy the attention.

The erysipelatous affections, which we mentioned in the last Report to have been so extremely frequent, and attended with so much malignancy of symptoms, have appeared but in a very few cases since that time; which cases were of a much milder nature, creating little or no alarm.

The temporary frost has, in several instances, been the occasional cause of mortification in the extremities of aged and infirm persons.

The most distressing disease which occurs among the poorer classes of society, and which is productive of most trouble to the surgeon, is that of strictures in the urethra, advanced to such a degree of obstruction as to have produced abscesses and consequent fistulæ in the perinæum or adjoining parts. These are cases which occur comparatively very frequently, as it may be perceived scarcely a month passes that does not produce one or more cases at this Dispensary. The frequency of the disease seems to proceed from the mode by which the laborious order of mankind generally treat the first appearance of simple gonorrhœa. There are in most neighbourhoods, or within a certain circle of connexion, one or more men (common labourers) who have a specific for the disease, and who are therefore applied to by their brethren when in want of relief.

relief. The remedy is generally an injection of a stimulating nature, which is, of course, indiscriminately used in every stage or variety of the complaint. Or, application is made to those shops where "injection powders" are advertized in the windows. The superior order of Empirics, whose nostrums can seldom be procured under half a crown, are the bane of a class of society one degree superior to those to whom we advert, who seldom, in the first instance, advance so high in their purchase of a remedy.

It must be evident that the indiscriminate use of these applications, which are, for the most part, compositions of white vitriol, blue vitriol, or corrosive sublimate, all of which are excellent remedies when properly adapted, produce such a state of the urethra, as to lay the foundation for strictures. When a stricture has formed, and a difficulty occurs in voiding the urine, the symptoms are attributed to gravel; and turpentine, and other stimulants of a like nature, with a copious supply of gin, are swallowed, "to force the water;" or, in consequence of the continuing gleet, the disease is considered as a weakness, and the original cause of the disease, stimulating injections, are still more assiduously applied; this latter error is sometimes fallen into, even by regular practitioners. If at this time application is made to a surgeon, who perceives the nature of the case, it very seldom happens, that persons in this sphere of life can or will adhere for a sufficient length of time, and with sufficient diligence, to the plan prescribed; it has been frequently observed to me, by persons of this description, that they had had a bougie introduced *two or three times*, but as they had experienced no relief, they had desisted from the attempt. Thus the disease acquires inveteracy, till at length the urethra gives way, the urine escapes, and abscesses and their consequences are the result. I have a patient at this time, where disease has followed a course very similar to this description; he had, fourteen years ago, a gonorrhœa, which was not attended to by any regular practitioner, but treated with nostrum injections; the gonorrhœa yielded, but after a short time he experienced some difficulty of micturition, which after suffering for some time, became the subject of consultation with a regular surgeon; this gentleman very properly recommended a continued use of bougies, and introduced them once or twice; when the patient, not finding immediate relief discontinued his attendance. For several years his disease gradually became worse, nor did he profit himself by further surgical assistance, till he became my patient, which

was

was in consequence of an abscess forming in the perinæum; the whole of the bottom of the abdomen, likewise, the scrotum, &c. &c. were in a most violent and extensive state of inflammation, from the effusion of urine; the abscess in the perinæum I opened deeply, whereby the urine obtained a free passage; but not before it had created so much mischief, as to produce an extensive sloughing of the parietes of the abdomen, scrotum, and integuments of the penis.

The innovation in the treatment of strictures which has very much obtained within these five years, from the authority of Mr. Home, who has improved upon the mode recommended by Mr. John Hunter; by the use of caustic applied by means of bougies, instead of those bougies which act merely mechanically, is an improvement in Surgery of great importance, when confined within its proper limits, and adapted to those particular cases to which it is peculiarly appropriate. Two cases, wherein their beneficial effects were particularly apparent, and well delineated, (besides many others of a less formidable appearance) have recently occurred in my practice; both these cases were fistula. In one of them, the aperture was over the pubis; in the other, there were several apertures in the perinæum and scrotum; in both, very little urine passed except by the fistula; in neither could the smallest bougie be passed during several weeks assiduous attempt; at length I had recourse to the caustic. After a few applications the urethra became pervious, and by a continued use of the common bougie for some little time, the disease was cured. The fistula healed by the assistance only of a stimulating injection, and no inconvenience was sustained.

But while I record these fortunate cases, I must confess that many instances have come to my knowledge, wherein much important injury has been sustained by the use of the caustic bougies. I am well convinced that of late their use has been too extensive: valuable remedies are generally active remedies; and active remedies, when indiscriminately used, will be productive, in the aggregate, of more harm than good; in my opinion, although this practice is an improvement of considerable consequence, its use should not be adopted till sufficient trial has proved the common mode ineffectual, but as a dernier resort when all other remedies have failed.

68, Hatton Street. J. RICARDS.

Account of Diseases in an Eastern District of London, from December 20, 1802, to January 20, 1803.

ACUTE DISEASES.	
Pneumonia - - - - -	3
Peripneumonia Notha -	5
Dysenteria - - - - - -	3
Febris Intermittens - -	1
Rheumatismus Acutus -	4
CHRONIC DISEASES.	
Catarrhus - - - - - -	10
Tussis - - - - - - -	25
Dyspnœa - - - - - -	14
Tussis cum Dyspnœa -	12
Raucedo - - - - - -	3
Asthma - - - - - - -	1
Hæmoptoe - - - - -	2
Phthisis Pulmonalis -	3
Palpitatio - - - - - -	1
Hydrothorax - - - - -	3
Cephalalgia - - - - -	5
Vomitio - - - - - -	2
Dyspepsia - - - - -	10
Gastrodynia - - - - -	4
Enterodynia - - - - -	5
Hæmorrhagia Intestinalis	1
Hæmorrhois - - - - -	2
Chlorosis - - - - - -	3
Amenorrhœa - - - - -	4
Lumbago - - - - -	2
Rheumatismus Chronicus	23
PUERPERAL DISEASES.	
Menorrhagia Lochialis -	2
Enuresis - - - - - -	2
Dolores Post Partum -	3
Ephemera - - - - - -	2
INFANTILE DISEASES.	
Vermes - - - - - - -	2
Febris Mesenterica - -	1
Tinea - - - - - - -	2

The state of diseases, as it may well be supposed, has varied during the last few weeks in consequence of the great changes which have taken place in the weather. The temperature of the air has been very different and the changes have been rapid. After a series of very mild weather the frost appeared very suddenly, and gave occasion to many of those complaints which usually occur at this season of the year. Diseases of the chest are daily increasing in number; Coughs, Catarrhs, and Peripneumonic affections are becoming very general ; and many aged persons, who had passed through a portion of the winter with tolerable comfort, are now suffering in consequence of the severity of the weather.

The Bill of Mortality states the number of deaths by the Small-pox during the last year as larger than that in the preceding. We were happy, however, to observe, that in that year the number was less than in former ones by nearly 1000. The comparison, therefore, of the present with former lists, affords a pleasing prospect of the diminished effects of this dreadful disease. It is of still more importance however, to remark that the subject has lately excited much of the public attention, and has produced such vigorous exertions in order to lessen the influence, or to procure the entire extermination of the disease, that it may be hoped it will soon cease to find a place in the list of those maladies by which the human frame has been visited.

MEDICAL AND PHYSICAL INTELLIGENCE.

JENNEREAN INSTITUTION.

A Society has just been formed in London for the universal extension of the Vacciolous Inoculation, of the progress of which we propose to present our Readers with the earliest information, as it promises to become an object even of national pride as well as of incalculable utility, from the spirit with which it has been instituted, and the interest which some of the most eminent or worthy characters offer to take in its Establishment.

At a very numerous and highly respectable meeting, holden at the London Tavern, on Wednesday, Jan. 19, 1803, to consider of the best means to be adopted for the extermination of the Small-Pox, the Right Hon. the LORD MAYOR in the Chair; the following Address was read, and presented to the Chair by Benjamin Travers, Esq.

"ADDRESS TO THE PUBLIC.

"The dreadful havock occasioned by that horrid pestilence, the Small-pox, which, in the united kingdom alone, annually sweeps away more than 40,000 persons, has long been a subject of deep regret to every humane and reflecting mind.

"The inoculation of this disease has opposed an ineffectual resistance to its destructive career. Although, confessedly, a valuable improvement in rendering the disease more mild, yet such has been the consequence of the partial adoption of the practice, that it appears, on a careful review of the history of the Small-pox, that inoculation, by spreading the contagion, has considerably increased its mortality.

"A new species of inoculation has at length been providentially introduced by our countryman, Dr. Jenner, which, without being contagious, without occasioning any material indisposition, or leaving any blemish, proves an effectual preservative against the Small Pox.

"The House of Commons having investigated this subject with the most scrupulous attention, and being perfectly convinced of the superior advantages resulting from this discovery, have given their sanction to the practice; the safety, mildness, and efficacy of which more than half a million of instances have fully confirmed.

"The unspeakable benefits which may be expected to arise from an extensive diffusion of this salutary practice, will be much accelerated by the establishment of an Institution in the central part of the Metropolis, on a broad basis, supported with a spirit equal to the design, and worthy of the character of the British nation.

And

And when the magnitude of the object is considered, which is no less than to eradicate a disease, acknowledged to be the greatest scourge that ever afflicted mankind, there can be but one sentiment on the subject.

"The enlightened, the benevolent, the opulent, will doubtless vie with each other in the zealous support of an undertaking which will reflect the highest honour upon their country; and by saving millions of victims from an untimely grave, prove an inestimable blessing to the whole human race."

The Right Hon. the Lord Mayor having read the Address from the chair, it was moved by Dr. Letsom, and seconded by Dr. Bradley, 'That the Address be received and adopted." Which was carried unanimously.

A Motion having been made by Mr. Gurney, and seconded by Joseph Leaper, 'That this meeting do form itself into a Society for the extermination of the Small-pox'—

The Hon. Admiral Berkley arose, and said, 'that he had it in command from his Royal Highness the Duke of Clarence to apologize to the meeting for his non-attendance, he having been unavoidably prevented from doing himself the pleasure and the honour of attending on the present interesting occasion; but that his Grace the Duke of Bedford held a motion in his hand, which, had his Royal Highness been present, he himself would have made.'

On this the Right Honourable Chairman observed, that a motion had already been made and seconded; and that, consequently, it must first be disposed of.

The Hon. Admiral acknowledged the propriety of the observation, but said that the motion was proposed as a tribute of esteem to a Benefactor of the World, and that if the previous motion could, for the moment, be waved, and the wish of his Royal Highness be acceded to, the honour intended, if voted, would be greater coming from a popular assembly, than if it were conferred by any organised society.

Mr. Gurney, on this, immediately offered priority to the wish of his Royal Highness; when,

On the motion of his Grace the Duke of Bedford, at the special request of his Royal Highness the Duke of Clarence, seconded by the Hon. Admiral Berkeley—It was

Resolved unanimously, That the thanks of this meeting be transmitted to Dr. Jenner, expressive of the high sense which it entertains of his merit, and the great importance of his discovery; and, particularly, for the liberal offer of his assistance to accomplish the great object it has in view.

Mr. Gurney's motion, That this meeting do form itself into a Society for the Extermination of the Small-pox was then carried unanimously.

On the motion of J. J. Angerstein, Esq.—It was

Resolved unanimously, That a subscription be now opened, to prosecute the laudable intentions of this Society.

Resolved unanimously, That the following three gentlemen be appointed Trustees, viz. the Right Hon. the Lord Mayor, John Julius Angerstein, Esq. and Benjamin Travers, Esq.

Resolved unanimously, That a Committee be now appointed for considering of and forming a Plan for the purpose of carrying into effect the important object of this Society, with liberty to add such gentlemen as they may think proper; that five be a quorum, and that they report the same to another General Meeting to be called by them.

The Committee having been nominated, it was

Resolved unanimously, That the thanks of this Society be given to the Governors and Officers of the Small-pox Hospital, for their very liberal offer to co-operate in the purposes of this Society.

Resolved unanimously, That the thanks of this Society be given to the Right Hon. the Lord Mayor, for his respectful attention, cordial support, and able conduct in the Chair.

Resolved unanimously, That all the Bankers of London, Westminster, and Southwark, and the Members of the Committee, be requested to receive subscriptions.

*** About 1000*l*. has been already subscribed to the Institution, and the Committee are zealously employed in giving effect and activity to the Resolutions.

SMALL-POX AND INOCULATION HOSPITALS, PANCRAS.

Extract from the Committee's Report presented to a General Court, at Batson's Coffee-House, London, on the 16th December, 1802.

"Your committee, in addition to what they stated in their last report, desire to recal to your attention the increased public benefit of this Institution, since the introduction of Vaccine Inoculation has been added to the former branches of its practice. It began in this hospital, under the direction of Dr. Woodville, in Jan' 1799; and from that period to the 1st of December instant, 11,800 patients and upwards have been vaccinated, of which number about 2,500 were afterwards proved to be secure from the *Natural Small-Pox*, by receiving a further inoculation according to the former practice, which took no effect; a number amply sufficient to satisfy the public mind of the security and success of the new practice of Vaccination. And your committee add, that they have not heard of any complaint from any one of those who were not inoculated a second time, of their having since taken the natural Small-pox, although they were chiefly indigent persons, and the far greater number of them living in places where the air is very confined, and particularly where it has been since ascertained that the natural Small-Pox was prevalent amongst those with whom many of them necessarily had continual intercourse.

"The success of Vaccination has very rapidly increased during the current year. From the 1st of January last to the 1st of December

December instant, of 373 patients admitted into the Inoculation Hospital, only 49 were inoculated according to the former practice; and of 4,005 out-patients, only 39 were inoculated according to the former practice; whereby it appears that the relief of the Institution has been afforded to 4,378 patients by Inoculation, of whom 88 having been inoculated according to the former practice, the blessing of Vaccination has been extended to 4,290 persons in eleven months by this Hospital. One hundred and fifty-nine patients in the natural Small-pox have been received into that department of this Institution; and medicines and advice have been granted to 55 children also in that disease, who were brought to the hospital as out-patients.

"This very extensive practice, under the skilful management of Dr. Woodville, the physician, and of Mr. Wachsell, the resident surgeon, have enlarged the sphere of this Institution, rendered it more beneficial to the poor, and increased its claim upon the public liberality.

"That liberality which has ever fostered its beneficent designs, has enabled your committeee to enjoy the lively satisfaction of co-operating in its promotion, and of witnessing the numerous instances of its general good.

"A. HIGHMORE, Sec."

31l. 10s. constitute a Governor for life, and 5l. 5s. an annual Governor; and other donations are gratefully received."

Professor Aldini, of the University of Bologna, availed himself of the opportunity afforded by the execution of Forster, on the 27th inſt. for the murder of his wife and child, to repeat his experiments on the theory of his uncle Galvani. A liberal offer had been made him of the use of that subject by Mr. Keate, surgeon to the king, who was himself present on this occasion. The result of this experiment promises the greatest advantages to the intereſts of humanity, especially in cases of apparent death by drowning, and other cases of asphyxia.

We hope that Mr. Keate and the Professor will shortly gratify the public with a particular account of an experiment, the first of its kind in Great Britain. The corpse was made to exhibit very powerful muscular contractions before dissection, and that afterwards these contractions continued for seven hours and a half. On the first application of the process to the face, the jaw of the deceased criminal began to quiver, and the adjoining muscles were horribly contorted, and one eye was actually opened. In the subsequent part of the process, the right hand was raised and clenched, and the legs and thighs were set in motion. It appeared to the uninformed part of the bye-ſtanders, as if the wretched man was on the eve of being restored to life.

During his residence in England, Professor Aldini exhibited his experiments at Oxford, at Mr. Wilson's Anatomical Theatre in London, and at St. Thomas's and Guy's Hospitals. And we learn with

with pleasure, that the lecturers and pupils of these two Hospitals have presented him with a gold medal, in honourable testimony of their approbation.

A Translation is in forwardness, and will speedily be published, of Sue's History of Galvanism, to which will be annexed a variety of copper-plates, and a familiar Introduction to the practice of that curious and interesting Science.

Humours of the Eye.—Mr. Chenevix has analysed the humours of the eye, making his experiments upon the eyes of sheep, and he considers the aqueous and vitreous humours as composed of water, albumen, gelatine, and muriate of soda: the chrystalline contains no muriate of soda.

A Gentleman at Baltimore, in America, in a letter to Dr. Patterson, of Londonderry, states, "that the Vaccine Inoculation goes on with success all over that Continent. To the *Southern* States, it is a blessing beyond all price, as even the inoculation for the Small-pox was a business of difficulty and danger; yet their physicians were extremely slow in adopting the discovery. This year, however, they have begun with great spirit, and the practice is become universal. That most amiable man, the present President of the United States, with his usual philanthropy, early used all his endeavours to introduce into Virginia, "*this first best Gift of Heaven*."

Mr. Huguenin, No. 33, Haymarket, has opened a warehouse for the genuine Lichen Islandicus and the preparations of it, recommended by Dr. Regnault, in the united quality of nourishment and medicine, conducted according to his prescriptions, and under his direction.

Mr. Power's new Work, entitled Observations on the Ophthalmia of Egypt, will be published in the course of a few days.

Mr. Thomas will commence his Spring Course of Lectures on the Practice and Operations of Surgery, on Wednesday, February 2, at seven o'clock in the evening, at his House in Leicester Square.

To CORRESPONDENTS.

Mr. Creaser's *Observations on Dr.* Pearson's *Examination of the Report of the Vaccine-Pock Committee of the House of Commons, concerning Dr.* Jenner's *claim for remuneration;—and The Account of the Discovery and Operation of a supposed new Medicine for Gout,—arrived too late for insertion in the present Number.*

Communications are received from Mr. Dennett *and Mr.* Washbourn.